TIME AND COSMOLOGY IN PLATO AND THE PLATONIC TRADITION

Edited by

Daniel Vázquez and Alberto Ross

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Abbreviations

Alexander of Aphrodisias

In Top.	*In Aristotelis topicorum libros octo commentaria*

Aristophanes

Nub.	*Nubes*

Arist. Aristotle

Ath. Pol.	*Athenaion politeia*
Cael.	*De caelo*
De an.	*De anima*
De motu an.	*De motu animalium*
Metaph.	*Metaphysics*
Part. an.	*De partibus animalium*
Ph.	*Physics*
Sens.	*De sensu*

Atticus

Fr.	*Fragmenta*

Calcidius

In Tim.	*On Plato's Timaeus*

Cicero

Acad.	*Academicae quaestiones*
De rep.	*De republica*
Leg.	*De Legibus*
Nat. D.	*De natura deorum*

Euripides

El.	*Electra*
Or.	*Orestes*

Eusebius

Praep. evang.	*Praeparatio evangelica*

Hesiod

Theog.	*Theogony*

Homer

Il.	*Iliad*
Od.	*Odyssey*

Origen

C. Cels.	*Contra Celsum*

Parmenides

Fr.	*Fragmenta*

Philoponus

De aet. mundi	*De aeternitate mundi contra Proclum*

Plato

Cra.	*Cratylus*
Criti.	*Critias*

Epin.	*Epinomis*
Euthphr.	*Euthyphro*
Grg.	*Gorgias*
Leg.	*Laws*
Phd.	*Phaedo*
Phdr.	*Phaedrus*
Phlb.	*Philebus*
Plt.	*Statesman*
Prm.	*Parmenides*
Resp.	*Republic*
Soph.	*Sophist*
Symp.	*Symposium*
Tht.	*Theaetetus*
Ti.	*Timaeus*

Plotinus

Enn.	*Enneades*

Plutarch

De an. proc.	*De animae procreatione in Timaeo*
Quaest. conv.	*Quaestiones convivales*
Quaest. Plat.	*Quaestiones Platonicae*
Sol.	*Solon*
SR	*De Stoicorum Repugnantiis*

Porphyry

Plot	*Vita Plotini*

Proclus

Elem. Theol.	*Elements of Theology*
In R.	*In Platonis Rempublicam commentarii*
In Ti.	*In Platonis Timaeum commentarii*

Seneca

Ep.	*Epistulae*

Sextus Empiricus

Math.	*Adversus mathematicos*

Simpl. Simplicius

In Cael.	*in Aristotelis de Caelo Commentarii*
In Phys.	*in Aristotelis de Physica Commentarii*
In Cat.	*In Aristotelis Categorias Commentarium*
SVF	H. von Arnim, *Stoicorum Veterum Fragmenta* (1903–)

Speusippus

Fr.	*Fragmenta*

Timaeus Locrus

TL	*Peri physios kosmo kai psychas*

Xenocrates

Fr.	*Fragmenta*

Introduction: Time and the Cosmos in Plato and the Platonic Tradition

Daniel Vázquez

Time and cosmology are strongly interconnected in the Platonic corpus. The way Plato's characters discuss these topics has puzzled and divided readers from the very beginning, giving rise to rich and diverse interpretations. Do Plato's dialogues argue for an eternal cosmos or one with a punctual beginning? What is the nature of time, and how should we understand its relation to eternity, change, and transition? How should we understand the relation between God, the cosmos, and time? The present volume assembles an international team of ancient philosophy scholars to engage with Plato's texts, and their ancient and modern interpretations, and to answer these and other closely related questions. The overall purpose of the volume is to push forward the study and understanding of Plato's conception of time and the cosmos as a way of finding fresh insight into the interpretation of his philosophy and his reception in antiquity. I begin with an introduction to these topics in Plato and the Platonic tradition broadly understood, before explaining the motivation and overall structure of the volume. I conclude by offering a concise description of the contents of each chapter.

1 Plato on Time and the Cosmos

Timaeus is the dialogue that examines more explicitly the interconnection between time and the cosmos in the Platonic corpus. There, Plato's character Timaeus[1] offers a detailed speech about the creation of the world and everything in it, including the stars, the earth, all living creatures, and, crucially, time. Timaeus credits the creation of all these things to a divine craftsman,[2] a benevolent and intelligent God who creates by imitating an unchanging and

1 Plato describes Timaeus as a rich, well-born expert in astronomy who has held high political offices in his natal Locri. There is no other record of him outside the *Timaeus* and *Critias*, which suggests that he is a Platonic invention. See Nails (1998, 293).

2 Timaeus calls him a "demiurge" *dēmiurgos* (*Ti.* 28a6), a "maker" *poiētēs* (*Ti.* 28c3), a "father" *patēr* (*Ti.* 28c3) and an "artificer" *ho tektainomenos* (*Ti.* 28c6).

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eternal model, introducing order to a pre-existing chaos made from traces of earth, water, fire, and air.

The speech has a complex and multi-layered structure. The dramatic setting is a meeting between Socrates, Hermocrates, Critias, and Timaeus on the occasion of the Panathenaea festival.[3] At the beginning of the dialogue, we learn that Socrates made a speech the day before, and now it is the turn of his interlocutors to reciprocate his efforts.[4] Timaeus, who knows about astronomy and natural science (*Timaeus* 27a3–6), gives the first speech of this sequence, and his task is to start with the origin of the universe and end with the nature of human beings (*Timaeus* 27a5–6).[5]

Timaeus begins with an invocation for the approval of the gods, goddesses, and their interlocutors (*Timaeus* 27c). Then, he offers a preamble to clarify his starting point and general principles (*Timaeus* 27d–29d). This includes the distinction between "that which always is and has no becoming" (*Timaeus* 27d6), and "that which comes to be but never is" (*Timaeus* 27d6–28a1; omitting *aei* with some MSS), a description of how we grasp the members of each class, the principle that things that come to be must have a cause, the rules of craftsmanship, and the status and limitations of a speech on the selected topic. The rest of the speech unfolds in three main parts. First, Timaeus explains the products of intelligent craftsmanship (*Timaeus* 29d4–47e2). Then he gives an account of the creations of necessity (*Timaeus* 47d3–69a5). Finally, he describes how Intellect and Necessity cooperate in the creation of human beings and all other living creatures (*Timaeus* 69a6–92c9). Timaeus' main passages about time, cosmos, and their relation occur in the first two parts of the dialogue. The interpretation of these passages is famously difficult.

Most scholars, however, agree on the following points. Timaeus argues that the cosmos is unique, spherical, intelligent, immortal, and a beautiful living being that includes within itself all other species of living creatures. The cosmos, in addition, is the best possible image of an eternal, unchanging model. Time, in turn, is the "moving image" of the eternity of the model. The circular and regular movements of the sun, the moon, and the planets set the different

3 The Panathenaea was an Athenian religious festival in honor of Athena Polias and Erechtheus. The festival was celebrated annually and in great numbers every four years. On the connections between the festival and the contents of the *Timaeus*, see O'Meara 2017, chapter 2, and Nagy 2002.

4 Socrates summarizes his speech in *Ti.* 17b–19a.

5 Before Timaeus' speech, however, Critias summarizes the story of how ancient Athens rejected the invasion of Atlantis (*Ti.* 20d–26c). The end of Timaeus' speech coincides with the end of the dialogue. Plato's *Critias* offers an incomplete version of Critias' speech, whereas there is no record of a dialogue containing Hermocrates' speech.

units of time, including the day and night, the months, and the years (*Timaeus* 37e). Although the cosmos and everything within it are in constant change, it has everlasting regularities, proportion, geometry, and a teleological order.

In almost all other topics and details, the dialogue's interpretation has been hotly debated. Most disagreements stem from what scholars call "the status of Timaeus' speech," which refers to the extent that Timaeus' descriptions are meant to be taken at face value or not.[6] In various passages, Timaeus alerts his interlocutors about the limitations of giving an account about the cosmos. From the beginning, he labels his speech a "likely story" (*eikōs mythos*) and later he calls it a "likely argument" (*eikōs logos*). In his preamble, he explains:

> On the subject of an image and its model, we must make the following specification: the accounts we give of things have the same character as the subjects they set forth. So accounts of what is stable and fixed and transparent to understanding are themselves stable and unshifting. We must do our very best to make these accounts as irrefutable and invincible as any account may be. On the other hand, accounts we give of that which has been formed to be like that reality, since they are accounts of what is a likeness, are themselves likely, and stand in proportion to the previous accounts, i.e., what being is to becoming, truth is to convincingness. Don't be surprised then, Socrates, if it turns out repeatedly that we won't be able to produce accounts on a great many subjects—on gods or the coming to be of the universe—that are completely and perfectly consistent and accurate. Instead, if we can come up with accounts no less likely than any, we ought to be content, keeping in mind that both I, the speaker, and you, the judges, are only human. So we should accept the likely tale on these matters. It behooves us not to look for anything beyond this.
>
> *Timaeus* 29b3–d3[7]

6 There are at least two other famous debates around the *Timaeus*. One is about its relation to other Platonic dialogues. This debate started with Owen (1953), who challenged the widespread view that *Timaeus* is a late dialogue and proposed, instead, that it belongs to the middle period. Cherniss (1957), in turn, responded by defending the traditional view. The discussion was later continued by Prior (1985, 168-93), Fine (1988, 374-79), Mueller (1989 8-20), Ledger (1989) and Brandwood (1990, 250). The second debate concerns the extent to which the *Timaeus* is indebted or influenced by Pythagorean philosophy. This debate goes back to Taylor (1928), who argued that the *Timaeus* was a 'deliberate attempt to amalgamate Pythagorean religion and mathematics with Empedoclean biology" (p. 10) and that it was a mistake to look for distinctive Platonic doctrines in the dialogue. This view was later refuted by Cornford (1935 [1997], vi-x). However, some still find important Pythagorean aspects in Timaeus' cosmology. See McClain (1978) and Horky (2013).

7 Translated by Zeyl 2000.

Although Timaeus' speech offers an overt description of the creation of the cosmos and time, many take the description as a non-literal tale with a deeper philosophical meaning. Others take it literally and see an attempt at offering a reasonable account of the beginning of the cosmos. Ancient authors and modern scholars alike have offered evidence and extensive arguments to justify their readings of the dialogue. Although many believe that there is a correct way to read the dialogue, the text seems to lend itself and be compatible with different readings depending on the initial assumptions and the different implications one is willing to accept. What is clear is that these controversies have always made the *Timaeus* Plato's most studied and influential dialogue.

Plato discusses cosmological questions in other dialogues too. In contrast with *Timaeus*, in *Republic* 7, due to the celestial bodies' corporeal nature, Socrates doubts that observational astronomy can reach any truth about their movements. The limitations of our observations, however, invite us to think beyond sense perception. For this reason, he proposes to replace traditional astronomy with "real astronomy," which he understands as the purely theoretical study of movement.

Later, in *Republic* 10, the myth of Er describes a column of light at the center of the cosmos, stretching over the whole of heaven and earth, and whose light binds the heavens and holds its entire revolution together. This forms the central axis of the universe, and from its extremities hangs the spindle of Necessity. The whorl of the spindle consists of different hollow whorls closely nested inside each other with their rims appearing as circles from above. The whole spindle turns at the same speed, but the inner circles revolved in an opposite direction and at different speeds. The spindle turns on the lap of Necessity, and each circle is accompanied by a siren uttering a single sound. On three equidistant thrones, the Fates, daughters of Necessity, sing to the music of the Sirens, Lachesis singing of the past, Clotho of the present, and Atropos of the future.[8]

In the *Statesman*, in turn, the main interlocutor, the Eleatic Stranger, offers a cosmological tale (*Statesman* 268d–274e) that explains and ties together three traditional Greek myths.[9] According to this account, the cosmos as we know it

8 *Resp.* 10, 616b-617c.

9 One is the quarrel between Atreus and Thyestes for the throne of the Mycenaeans, in which Zeus showed his support for Atreus' claim by reversing the direction of the setting and rising of the sun and the stars. Another is the Kingship of Cronus, known as the golden age of men. The last one is the myth that earlier men were earthborn, not reproduced from each other.

rotates on its own, but slowly and steadily becomes disharmonious. To restore its order and guarantee its immortality, God must periodically intervene and take over the rotation of the cosmos, changing its direction for an allotted period of time. The change of rotation causes great disasters and when God is guiding it people are born from the earth and grow backwards (from old to young). They live without toils and are ruled by minor divinities.[10]

The *Statesman*'s cosmology shares some similarities with the one offered by Timaeus. In both cases, the cosmos is a living and intelligent being which rotates in a regular fashion. But unlike the Timaean cosmos, in the *Statesman* the cosmos turns on a pivot, like in the myth of Er. Moreover, in the *Statesman*, time does not depend on the movement of the celestial bodies, so when God changes their direction, time continues to flow in the same direction.[11] Only generation reverses its course.[12]

In Plato's *Laws* X we also get an examination of cosmological principles.[13] The topic arises from a discussion about the dangers of atheism. According to the Athenian—the main interlocutor in the dialogue—atheists argue that the celestial bodies, instead of gods, are just earth and stones, incapable of caring for human affairs (*Laws* 886e). One of the doctrines that defends this position attributes everything that has come to be, is coming to be now, or will come to be later either to nature, chance, or art. The doctrine maintains, however, that the celestial bodies and their movements are caused only through nature and chance without art, intelligent planning, or any deity (*Laws* 889a–e). Gods, in this view, are human inventions, legal fictions. The Soul, in turn, derives from the four material elements and not the other way around.

The Athenian argues that the mistake in this type of cosmology consists in misunderstanding the nature of Soul and denying its priority. His argument starts by distinguishing between self-generating motion and transmitted motion. The former moves itself and other things, whereas the latter moves other things but not itself, since it can only be moved by another motion. From this he argues that the first cause of motion has to be self-generating motion.

10 People normally read the myth as having two recurring eras (one where the cosmos is guided by God, one with the cosmos rotating on its own). Brisson (1995), however, reads the myth as having three eras, whereas Carone (2004, 2005) argues for five. For a recent defense of the traditional reading see Gartner and Yau (2020).

11 Giorgini (2005, 199), however, uses *Ti.* 39c–d to suggest that time reverses in the *Statesman*. Against this idea see, for example, *Statesman* 272a–b and 270e9–217a1.

12 The *Statesman* myth, however, is closer to Critias' account at *Ti.* 22b–23d.

13 Plato's dialogues contain many other passages relevant for cosmology, even if they do not attempt to offer a cosmology as such. See for example *Phd.* 107c–115a, *Phdr.* 245c–246a, *Phlb.* 30a–c, *Soph.* 248e–249d, *Leg.* 7, 821b–d.

But something that moves itself, he continues, must be alive, and everything alive has a soul. The Athenian then defines the Soul as self-generating movement, which makes Soul the first source of all movement and guarantees its priority over matter. He later claims that the Soul is the cause of all things, including good and evil, beauty and ugliness, justice and injustice. In his account, the best kind of souls, rational and virtuous, control the movements of the heavens (*Laws* 895a–897).

The cosmology in *Laws* X reminds us of the *Timaeus*, but it raises some exegetical puzzles too. Although in both dialogues the soul has priority over body, souls in the *Timaeus* are never defined as self-generating movement. In *Laws* X, the Athenian explicitly holds that souls cause all motion, whereas Timaeus is unclear about it. Some use *Laws* X to defend particular interpretations of the *Timaeus*, others think that they contain two different and incompatible cosmologies.

Let us now turn our attention to Plato's *Parmenides*. The characters in this dialogue do not offer a cosmology proper,[14] but in the second part of the dialogue, Parmenides and Young Socrates examine some arguments about time, temporal relations, the now, and the instant. The general context of these arguments is the demonstration of Parmenides' method of training in philosophy. This starts with assessing the consequences of Parmenides' hypothesis that the One is (*ei hen einai; Parmenides* 137c4). One of the arguments deduces that if the One is, it does not come to be, nor is it older, younger, or of the same age as anything (*Parmenides* 140e1–141a4). But if that is so, then the One does not participate in any way in time (*Parmenides* 141d6–7). Given that Parmenides and Young Socrates assume at this point that there is no other way to participate in being than to participate in time, they conclude that if the One is, in no way does it participate in being, nor is it one (*Parmenides* 141e7–142a1). Given that this conclusion sounds unacceptable, they start over and reconsider the hypothesis that the One is by assuming it to mean that the One participates in being (*Parmenides* 142a6–c7). Under this new reading of the hypothesis, the One participates in time and holds temporal relations with itself and other things (*Parmenides* 151e3–152a3). This implies that the One advances in time, which leads Parmenides to discuss how the One relates to the "before" (*to pote*), "after" (*to epeita*), and the "now" (*to nyn*), and again whether it is older, younger, or the same age as itself and others (*Parmenides* 152b2–155d4).

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14 However, see, for example, Wersinger Taylor 2019 and Gardner 2019.

Shortly after this, Parmenides raises a question about *when* the transition from rest to moving occurs. Parmenides claims that it cannot occur at one time and introduces the notion of the instant of change:

> 'And whenever, being in motion, it comes to a rest, and whenever, being at rest, it changes to moving, it must itself, presumably, be in no time at all.'—'How is that?'—'It won't be able to undergo being previously at rest and later in motion or being previously in motion and later at rest without changing.'—'Obviously not.'—'Yet there is no time in which something can, simultaneously, be neither in motion nor at rest.'—'Yes, you're quite right.'—'Yet surely it also doesn't change without changing.'—'Hardly.'—'So when does it change? For it does not change while it is at rest or in motion, or while it is in time.'—'Yes, you're quite right.'
>
> 'Is there, then, this queer thing in which it might be, just when it changes?'—'What queer thing?'—'The instant. The instant seems to signify something such that changing occurs from it to each of two states. For a thing doesn't change from rest while rest continues, or from motion while motion continues. Rather, this queer creature, the instant, lurks between motion and rest – being in no time at all – and to it and from it the moving thing changes to resting and the resting thing changes to moving.'—'It looks that way.'
>
> *Parmenides* 156c1–e7[15]

While the "now" is in time, between the "before" and "after," the instant is in no time at all, but lies between motion and rest.

Like the passages in *Laws* x, the arguments in the *Parmenides* raise difficult exegetical questions. At first sight, the notion of time in the *Parmenides* seems independent from that in the *Timaeus*. Parmenides never mentions the movements of the celestial bodies or the creation of time by the Demiurge. But one may still think that the claims in both dialogues are compatible.

2 The Platonic Tradition

Given that Plato wrote such sophisticated texts and that the connections between them are difficult to interpret, it should come as no surprise that from the beginning, the reception of Plato's thought was subject to intense debate.

15 Translated by Gill and Ryan 1996.

His readers developed contrasting exegetical strategies and, as a result, assessed his arguments and methods differently, agreeing and disagreeing with different parts of it. Here I shall only offer a brief, panoramic view of the Platonic tradition in the ancient world. This tradition, broadly understood, includes Plato's successors in the Academy, Aristotle and his followers in the Lyceum, and many later Platonic schools and philosophers, including the Stoics.[16]

After Plato's death in 347 BCE, his nephew Speusippus (c. 407–399 BCE) became the head of the Academy until his death, when he was succeeded by Xenocrates (c. 396–314 BCE).[17] Then Polemo (c. 350–267 BCE) became the third head of the Academy after Plato. Other important members of the school included Eudoxos of Cnidos (c. 390–337 BCE), Philippus of Opus, Heraclides Ponticus (c. 390–310 BCE), Crantor (died 276 BCE), and Crates of Athens (died c. 268–264 BCE). This period is known as the "Old Academy."[18] It coincides with Aristotle's foundation of the Lyceum (334 BCE) and the first generations of Peripatetics. But Polemo taught Zeno of Citium (c. 334–262 BCE), who later became the founder of the Stoics. Philosophers in these three schools were careful readers of Plato. They all criticized, rejected, or developed some of Plato's arguments and ideas.[19]

Speusippus and Xenocrates both rejected Forms but proposed two metaphysical principles, one of unity, the other of multiplicity. They both believed that the processes described in the *Timaeus* were timeless and eternal, and that the creation of the cosmos was not meant literally. Most other members of the Academy agreed with this interpretation. Philippus of Opus rejected supramundane realities and divided the cosmos into five zones, each composed mainly of one element but with admixtures of all the others in small quantities. Polemo, in turn, is known for maintaining that the supreme God is immanent and can be identified with the cosmos.[20]

Aristotle interprets Plato differently. He reads the creation tale literally and accuses Plato of proposing a temporal beginning of the cosmos. One of the problems he finds in *Timaeus* is that "the heaven, though it was generated, will none the less exist for the rest of time."[21] But for Aristotle, this is impossible.

16 Plato also influenced the Epicureans. See Goodman and Aikin 2017.

17 Most of the works from this period have been lost, with the exception of a couple of dialogues like *Epinomis,* normally ascribed to Plato's secretary Philippus of Opus, and *Minos* and *Hipparchus*, probably by an unknown author from the middle of the fourth century.

18 On this period see Dillon 2003.

19 On Aristotle's reception of Plato, see Cherniss 1944. For Plato's reception in Hellenistic philosophy, see Barnes 1991.

20 See Dillon (1996, 166).

21 Arist. *Cael.* I 10, 280a30–32. Transl. Stocks 2014.

In *De Caelo* I 12, he argues both that it is impossible for what is generated to be indestructible, or for that which is ungenerated to be destroyed. Thus, he maintains that the cosmos is ungenerated, eternal, and incorruptible.[22]

For Aristotle, there are five elements: earth, water, air, fire, and aether. Each of these elements has a natural place, which they will occupy if they are not hindered. This divides the cosmos into five concentric strata. The first four constitute the sublunar world; the last one is surrounded by a stratum of aether, which is ungenerated, indestructible, and constitutes the heavens. The movements of the celestial motions are explained by a system of concentric spheres, which are ultimately moved by the Prime Unmoved Mover. The cosmos is not infinitely large, but outside of it there is no void, place, or time.[23] That there is no time outside of the cosmos is clear if one considers Aristotle's definition of time as "a number of change with respect to the before and after."[24] Since there is no change outside the cosmos, there cannot be time either. Theophrastus (c. 371–287 BCE), Aristotle's successor as head of the Lyceum, deserves a brief mention. He seems to have questioned Aristotle's division of the cosmos. Instead, he conceived the cosmos as a continuous, single, and complete living organism. Moreover, it seems that he located the cause of movement of the heavens in the heavens themselves, rather than in their desire for a Prime Mover or something else. He conceived time as an accidental attribute of motion.[25]

The Stoics defended various accounts according to which the cosmos generates, develops, is burned up by a conflagration, and even generates again in an endless cycle. Although these accounts share their fundamental tenets, they also reveal an ongoing engagement with the previous philosophical tradition, with other contemporary schools of thought and a debate inside the Stoa. It is possible to understand their cosmologies as a critical continuation of complex philosophical debates started by Heraclitus, Anaximenes, the Pythagoreans, Plato, and the Old Academy.[26]

Like Plato, the Stoics presuppose a single-cosmos order. They propose two first principles of this cosmos, which cannot be reduced to one another. Both principles are bodies that occupy space and offer resistance; they are

22 Arist. *Cael.* I 10–12; II 13. Aristotle's arguments in *Cael.* I 12 where very influential and may have motivated some Academic philosophers to take a non-literal reading of *Timaeus*.

23 Arist. *Cael.* I 9, 279a11–ff.

24 Arist. *Ph.* 4, 11, 219b 1–2.

25 See Ierodiakonou 2020.

26 See, especially, DK22B30–31, DK13A5–7, DK58B34, Plato's *Phaedo*, *Theaetetus*, *Philebus*, *Sophist*, and *Timaeus*, Cicero's *Academica* I 24–29; whether they had access to Aristotle's texts and later Peripatetic philosophy is a more controversial issue.

ungenerated, indestructible, and inseparable. One is described as that which acts and the other as that which is acted upon. The Stoics identified the first one with "God," "reason," or "cause," and the second one with the "unqualified substance," "matter," or "substrate."[27] According to their accounts, God pervades the entirety of matter through and through, and structures it according to its perfect, inescapable, and intelligent designing plan, to create the cosmos, its current state, and, even its endless cycle of conflagration and regeneration.[28] The Stoics understood God's relation to matter as that of a soul to its body. Consequently, they thought of the cosmos as a divine living organism.[29] For the Stoics, time is incorporeal and infinite on either side.[30] Zeno defined it as "the dimension of all motion without qualification,"[31] and later Chrysippus conceived of it as "the dimension of the world's motion according to which the measure of speed and slowness is spoken of; or the dimension accompanying the world's motion."[32]

After Polemo the Academy turned to skepticism and an aporetic interpretation of Plato's dialogues. This period, known as the New or Skeptical Academy, begins with Arcesilaus (316/5–241/0 BCE), and includes Lacydes, Telectles, Evander, Hegesinus, Carneades (214/3–129/8 BCE), Hagnon of Tarsus, Clitomachus (187/6–110/9 BCE), and Philo of Larissa (159/8–84/3 BCE). Many of the members of the Academy engaged in polemics with the Stoics, whom they saw as dogmatic.[33] Philo of Larissa taught for some years in Rome, and Cicero (106–43 BCE) became his student. He was also the last undisputed scholarch of the Academy, and after his death in 84/3 BCE the school split into various factions.

Scholars refer to the next stage as Middle Platonism.[34] It usually starts with Antiochus of Ascalon (c. 125–68 BCE), one of Philo of Larissa's students in Athens. Antiochus distanced himself from the skeptical interpretation of Plato and took inspiration from the Old Academy, Aristotle, and the Stoics. Antiochus' cosmology was a combination of Platonic and Stoic doctrine. He

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27 See DL 7.134=LS44B; Sextus Empiricus, *Math.* 9.75–76=LS44C; Calcidius, *In Tim.* 292=LS44D; Calcidius, *In Tim.* 293=LS44E; Seneca, *Letters* 65.2=LS55E.

28 See Euseb. *Praep. evang.* 15.14.2=LS46G; Calcidius, *In Tim.* 144=LS54U.

29 Plutarch, *SR* 1053B=LS46F; Origen, *C. Cels.* 4.14=LS46H; Euseb. *Praep. evang.* 15.15.1–9=LS67L.

30 Sextus Empiricus *Math.* 10.218=LS27D; Stobaeus 1.106,5–23=LS51B.

31 Simpl., *In Cat.* 350,15–16=LS51A.

32 Stobaeus 1.106,5–23=LS51B.

33 On this period see Schofield, Burnyeat, and Barnes 1980.

34 For this period see Dillon 1996, Boys-Stones (2001; 2017), the first four chapters of Karamanolis 2006 and Schofield 2010.

maintained that the universe was governed by a providential, immanent God, and that his providence consisted in the activity of his reason, which was the law of nature and the Soul of the world. For him, nothing was better than reason, the common possession of humans and gods.[35]

Several schools and important philosophers emerged during the next couple of centuries. Alexandria became an important center for Platonic and Neopythagorean philosophy with Eudoros (first century BCE) and Philo of Alexandria (c. 20 BCE–50 CE). The latter taught Ammonius of Athens (first century CE), who in turn taught Plutarch of Chaeronea (c. 45–120 CE). Athens remained an important place for philosophy too, with the contributions of Nicostratus, Calvenus Taurus (second century CE), Atticus (fl. c. 175 CE), Harpocration of Argos, and Severus. There was also a Neopythagorean movement that incorporated Plato into their philosophy. One of its members was Numenius of Apamea (fl. late second century CE). We also find "the school of Gaius" around the second century CE. In addition, the Gnostic and Hermetic writings, as well as the Chaldean Oracles, were heavily influenced by Platonism and later used by Neoplatonic philosophers. Other important philosophers from this period include Theon of Smyrna (fl. 100 CE), Maximus of Tyre (fl. late second century CE), Alcinous (second century CE), Celsus (second century CE), and Calcidius, as well as the Christian Platonists, including Clement of Alexandria (c.150–215 CE) and Origen (c.184–253 CE).

It is impossible to do justice to all these thinkers here, but let it suffice to say that the period saw a revival of theories of transcendent first principles. Many philosophers in this period accepted the non-literal interpretation of the *Timaeus* and maintained that the cosmos was eternal and ungenerated. However, Plutarch and Atticus defended a literal interpretation of the *Timaeus* and maintained that the cosmos was created by God.

The last stage I will mention is commonly known as Neoplatonism.[36] The first and most famous philosopher of this period was Plotinus (205–270 CE), who was taught by Ammonius Saccas (fl. third century CE). Plotinus divided reality into two categorically different realms, the sensible and the intelligible. The latter is divided in turn into three levels, called hypostases. On top we find the first cause of everything else. This is an ineffable principle, known as the One or the Good. The second level derives timelessly from the One, and is the Intellect, which contains all the Forms. From the Intellect derives in turn the Soul, which creates the sensible universe at the same time as it creates time. For Plotinus, this meant that

35 Attributing the views in Cicero, *De Legibus* I 23 to Antiochus. See Dillon (1996, 80).

36 The division is however artificial, and the label is an invention from early nineteenth-century scholarship.

the cosmos as a whole, the heavens, and the celestial bodies were everlasting, and time was the life of the Soul.[37] As in Plato's *Timaeus*, the sensible realm is an imperfect image of the intelligible. The sensible cosmos is a living, intelligent organism that contains all other organisms, material instantiations of the Forms, and matter.

Later Neoplatonists included Porphyry (c. 234–305 CE), Iamblichus (c. 242–325 CE), Syrianus (died c. 437 CE), Proclus (412–485 CE), Marinus (born c. 440 CE), Damascius (c. 458–538 CE), and Simplicius (c. 490–560 CE), as well as the Christian theologians John Philoponus (c. 490–570 CE), and Pseudo-Dionysius the Areopagite (late fifth to early sixth century CE). It would be impossible to summarize their philosophical contributions here, but in short, they developed sophisticated metaphysical systems and wrote insightful commentaries on Plato and Aristotle. Like Plotinus, they defended the everlastingness of the cosmos and an absolute conception of time, in which time was independent and prior to things in time.[38]

3 Motivation and Overall Structure of the Volume

Within this larger context, the present volume makes a non-exhaustive and humble contribution to our understanding of Plato and some parts of the Platonic tradition. The motivations that led to this volume were threefold. Firstly, in Platonic scholarship, we wanted to restart and move the discussion forward regarding Plato's conception of time in the context of his cosmology. In a way, Plato's conception of time and the cosmos has been discussed at length.[39] However, on the specific topic of time and its relation to the cosmos, most recent authors have simply aligned themselves to previous interpretations, repeating known arguments or textual observations. The few attempts to break with these traditional readings of Plato[40] have raised important

37 On Plotinus' cosmology, see *Enneads* II–III. See also Wilberding 2006 and Chase 2014.

38 See for example Proclus, *Elem. Theol.* § 52–3.

39 See, for example, Cornford (1935) 1997, Owen 1936; 1966, Vlastos 1939; 1964, Callahan 1948, Philippson 1949, Fränkel 1955, Hackforth 1959, Leyden 1964, Brague 1982, Sorabji 1983, Mohr 1985, Baltes 1996, Dillon 1997, and Keizer 2000. The last twenty years have greatly advanced our understanding of Plato's cosmology and metaphysics. See, for example, Natali and Maso 2003, Johansen 2004, Karfik 2004, Carone 2005, Leinkauf and Steel 2005, Gregory 2007, Sedley 2007, Mohr and Sattler 2010, Fronterotta 2010, and Broadie 2012. Although they appeared too late for the present volume to take proper account of them, see also Sattler 2020, and Jorgenson, Karfík, and Špinka 2020.

40 For example by Carone 2005, Johansen 2004, and Fronterotta 2010.

questions and motivated renewed interest in Plato's cosmology and understanding of time. The chapters of this volume dedicated to Plato aim to contribute to this growing interest, and to the new wave of interpretations and textual observations regarding Plato's philosophy of time and cosmology.

Secondly, we wanted to explore Plato's influence on Peripatetic and Stoic philosophy, understood here as two rightful branches of the Platonic tradition. Although most scholars agree that the Peripatetics and Stoics were careful readers of Plato, sometimes it is assumed that only the Old Academics, Middle Platonists, and Neoplatonic philosophers count as true heirs of Plato. In this volume, we actively challenge this assumption and believe that in doing so, we can modify how scholars perceive Plato's role and importance for the history of cosmology. We also wanted to reconnect contemporary Platonic scholarship with debates in the ancient Platonic tradition.

A third and more general motivation was the need for a better and up-to-date understanding of Plato's contribution to the philosophy and history of physics, especially regarding time and the models and metaphors of the beginning of the universe. In many historical surveys of physics and cosmology, Plato receives only a brief and sometimes superficial mention.[41] Authors often use Plato to introduce Aristotle, who is taken to be the first systematic thinker deserving of detailed analysis. Moreover, to date, there has been no recent volume dedicated to Plato's notion of time and its relation to cosmology. Despite this tendency to omit Plato, the *Timaeus* and the *Parmenides* were two of the most influential texts in antiquity, and, although this exceeds the scope of the present volume, they were also fundamental texts for medieval and early modern philosophers and cosmologists. This volume aims to bolster what little attention Plato's contribution has received in the history of science and the philosophy of physics. We believe Plato had an impact that is detectable across centuries, up to today, and deserves a central role in the history of ancient cosmology and a whole chapter in introductions to philosophy of time.

Given the shared aims, overlap of topics, and interconnections, the volume offers its eight chapters in a continuous order. The reader will find, however, that the first six chapters are mainly dedicated to interpreting Plato, whereas the last two discuss his reception by Aristotle and the Stoics. While chapter

41 For example, Bardon (2013) dedicates sections to Parmenides and Zeno of Elea but then omits Plato and jumps straight to Aristotle and Augustine. Similarly, in the volume edited by Dyke and Bardon (2013), part I puts together a section dedicated to the history of philosophy of time that includes excellent chapters on Heraclitus and Parmenides, Zeno's Paradoxes, Aristotle, and the Stoics. However, it completely ignores Plato and Neoplatonism.

one is exclusively dedicated to Plato's *Statesman*, chapters two to six offer contrasting exegetical approaches to the *Timaeus* (most of them also include discussion and comparisons with the *Laws*, *Parmenides*, and other dialogues). Thematically, four chapters (chapters one, four to six) explore different aspects of Plato's conception of time, including its creation (chapter four), its relation to human nature (chapter one), light (chapter five), and instantaneity (chapter six). The other four chapters (chapters two, three, seven, eight) focus instead on God's relation to the cosmos, including the Demiurge's status and role (chapters two and three) and the discussion of the intelligence and source of movement of the cosmos (chapters seven and eight). That being said, to some extent most of the chapters discuss both topics. The chapters also offer various methods and approaches, representing different traditions of interpreting and analysing Plato and his successors. In what follows, I offer a brief summary of each chapter.

4 Summary of the Contents

Chapter one offers an innovative approach to the cosmological myth in Plato's *Statesman* by focusing on the continuity between the cosmic ages in the myth and the persistence of humanity over time. Chapters two and three discuss the role of the Demiurge in Plato's cosmology and argue for opposing theses. One argues that the Demiurge is a separate intellect with an efficient and goal-directed, causal role. The other rejects that the Demiurge is a separate intellect and argues instead that the description of demiurgic activity is a thought experiment that helps us visualize the cosmos' participation in the intelligible model. The next pair of chapters offer close, literal readings of time in the *Timaeus*. Chapter four discusses the creation of time and the pre-cosmos, whereas chapter five analyzes Timaeus' theory of light to understand his definition of time. Chapter six analyses the notion of the "instant" in the *Parmenides* and uses it to interpret the *Timaeus*. The last two chapters explore the reception of Plato's cosmology. Chapter seven reads Aristotle's arguments in *Physics* VIII.5 as a criticism of Plato's *Laws* X and *Timaeus*. The final chapter distinguishes three families of arguments for the intelligence of the cosmos and tracks their Platonic background in passages from the *Timaeus* and *Philebus*. In what follows, I summarize the main argument of each chapter.

Jenny Bryan writes chapter one, entitled "Continuity and Community in the Myth of the *Statesman*." The chapter argues that although the Stranger's myth contrasts the Ages of Kronos and Zeus and the communities living in each epoch, it also stresses the continuity between both communities. This

expands the sense of "us" to refer to a community of humans that persists through the Ages. The myth, Bryan argues, does not talk about different races of human beings but different epochs of the history of humanity. But the myth also reminds us that these Ages are all part of a divine design. During one of the Ages, God let go of his creation, but this is never a total abandonment. The myth is thus designed to make us recognize not only our place in a divinely designed cosmos but also the times we live in, and our broader place in the history of humanity.

In chapter two, "The Demiurge and His Place in Plato's Metaphysical Scheme," Viktor Ilievski argues that, for Plato, the Demiurge should not be dismissed as a didactive device or, as many believe, identified with the World Soul. Instead, the chapter argues that the Demiurge personalizes an independent *nous*, which is a separate, new entity that represents a creative and governing cosmological principle. In this way, Ilievski gives the Demiurge a central role in Plato's cosmology and late metaphysics, making it the supreme God and highest causal principle.

The chapter is divided into three sections. The first two offer a concise and useful history of the discussion both in ancient and contemporary authors. These sections map the vast history of interpretation of the Demiurge's role in Plato's metaphysics, and then focus on some of the authors who aid the chapter's thesis, including Plutarch, Atticus, and Proclus in the ancient world, as well as modern scholars like Hackforth, Mohr, Menn, Brisson, Johansen, and Broadie. Ilievski argues that a careful look at the development of Plato's interpretations shows that the discussions culminate in recognizing the Demiurge is a separate *nous*, distinct both from the World Soul and the Good. In the last section, he goes back to Plato and analyzes the main passages from the *Timaeus* and other dialogues like the *Laws*, *Philebus*, and *Statesman.* He then argues that the Demiurge has a causal role that is both efficient and goal-directed.

Luca Pitteloud defends a different interpretation of the Demiurge's role. In chapter three, "Goodbye to the Demiurge? *Timaeus'* Discourse as a Thought Experiment," he argues that the Demiurge should not be understood as a cosmological or ontological principle, but rather as an epistemological point of view. Pitteloud argues for the best explanation. He proposes to understand the *eikōs mythos* as a thought experiment whose aim is to place the reader inside the mind of the Demiurge. In this way, as readers of Plato, we re-enact in our minds the constitution of the cosmos and, by doing so, we can obtain new information and a better understanding of the universe. For Pitteloud, this reading of Timaeus' speech makes sense of passages where we find detailed accounts of the reasoning and decision making of the Demiurge. Moreover, the thought experiment allows the reader to visualize the cosmos from two

different perspectives, the external standpoint of the Demiurge and the internal, and human, viewpoint. But if that is the main purpose of the creation story and the Demiurge's role, one might wonder whether it would not be more reasonable to say goodbye to the Demiurge as a separate intellect. Pitteloud offers a clear interpretation that, although briefly considered by Johansen, Brisson, and Burnyeat, receives here a detailed and sophisticated defense for the first time.

In chapter four, "Before the Creation of Time in Plato's *Timaeus*," I defend, against its more recent critics, a literal, factual, and consistent interpretation of Timaeus' creation of the cosmos and time. My main purpose is to clarify the assumptions under which a literal interpretation of Timaeus' cosmology becomes philosophically attractive. I propose five exegetical principles that guide my interpretation. Unlike previous literalists, I argue that assuming a "pre-cosmic time" is a mistake. Instead, I challenge the exegetical assumptions scholars impose on the text and argue that for Timaeus, a mere succession of events and the relations derived from it (before, after, simultaneous with) imply no time, given the narrow definition of the term used in the dialogue. For Timaeus, I explain, time is measurable, regular, and dependent on the motion of the celestial bodies. A mere succession of events like the one needed to understand the creation story and the pre-cosmos requires none of these elements. Readers of Plato erroneously assume that a succession of events implies time, but that is to impose a conception of time absent in the text. The chapter offers a detailed reconstruction of the pre-cosmic stage under a literalist interpretation and argues how it is compatible with the immutable relationship between the Demiurge and the cosmos.

The next chapter tackles more directly the question about the nature and definition of time in the *Timaeus*. It is entitled "Time and Light in Plato's *Timaeus*," and in it, Carolina Araújo analyzes Timaeus' theory of visibility and light to better understand the conception of time at play in his cosmological discourse. Araújo starts by arguing that, for Timaeus, the cosmos is generated because it is visible and not, as it is often assumed, the other way around. According to Timaeus, she continues, visibility is possible thanks to the moving body of light streaming from the sun, which connects the particles of light in objects with those in our eyes. But this theory, Araújo notices, fails to explain night vision. This is an important flaw in the theory given that astronomical observations are essential for a proper understanding of the cosmos and its role as an image of the eternal model. Araújo explains the concept of cosmic days and nights as distinct temporal units and argues that Timaeus aims to build a calendar based on these units. This implies overcoming the challenge of calculating the motion of all celestial bodies in relation to the sun. In the last

part of the chapter, Araújo uses these results to interpret Timaeus' account of time and to argue that time is the movement of all heavenly bodies relative to the motion of light streaming from the sun.

Chapter six, "Eternity, Instantaneity, and Temporality: Tackling the Problem of Time in Plato's Cosmology" by Silvia De Bianchi, explores the relation between change, time, and atemporality in late Plato. De Bianchi uses the notion of instantaneity in the *Parmenides* to solve the puzzle of atemporality and demiurgic agency in the *Timaeus*. The chapter starts by showing that Plato's late dialogues deploy a rich and complex conception of atemporality, sometimes showing more nuance than contemporary accounts. De Bianchi analyzes some of the most pressing puzzles derived from Timaeus' cosmology, namely, the generation of time and the transient character of the receptacle. She proposes to solve these puzzles by considering the notion of the instant in *Parmenides*, which she understands as a distinct type of atemporality.

In his chapter, "Is the Prime Mover a Soul? A Critique of a Platonic Thesis in *Physics* VIII," Alberto Ross reconstructs Aristotle's criticisms against the idea that the Prime Mover is a soul in *Physics* VIII. Aristotle argues that the Prime Mover must be immaterial and absolutely immobile in order to explain the continuity and the eternity of change. This means that it must not undergo any movement at all, not even of an accidental form. But this implies that the Prime Mover should be different from other kinds of principles of motion, such as souls, which are immobile movers, but which undergo accidental motion. Ross proposes to read Aristotle's clarification of this point as a reaction against the positions defended by Plato in *Laws* X and the *Timaeus,* according to which the cosmos is an animal composed of body and soul, and to argue that this soul is a kind of first principle for nature and change.

The last chapter is dedicated to Stoic cosmology and its Platonic heritage, and is entitled "Stoic Cosmic Intelligence and its Platonic Background." In this chapter, Ricardo Salles classifies surviving Stoic texts into three families of Stoic proofs for the intelligence of the cosmos. Then he analyzes them and tracks the arguments' antecedents in Plato. The first family goes back to the *Timaeus.* The argument rests on the teleological thesis that the role of human intelligence is to contemplate the cosmos. This family of proofs differs from the other two because the latter argue from a different starting point. Families two and three argue for the intelligence of the cosmos from an account of the origins of human intelligence. Salles shows that these two families have striking parallels with proofs for the intelligence of the cosmos in Plato's *Philebus* and Xenophon. But these two families, Salles explains, also differ in the way they conceive the origins and transmission of human intelligence. This difference

makes Salles conclude that the third family is more strongly connected to the proof found in *Philebus* and Xenophon.[42]

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CHAPTER 1

Continuity and Community in the Myth of the *Statesman*

Jenny Bryan

1.1 Introduction

Having run into difficulties with their attempts to identify the "statesman," and in response to Young Socrates' unhesitating acceptance of the unsatisfactory definition they settled on at 266e–267c,[1] the Stranger suggests to Young Socrates that "we must begin again from a different starting point, taking a different route" (268d5–6). "We must," he declares at 268d8–9, "make use of a substantial part of a great myth (*megas mythos*)."[2] The Stranger goes on to identify the elements of the story to follow. First is the "phenomenon [*phasma*] relating to the story of the quarrel between Atreus and Thyestes" (268e8–11), which is explained as the reversal of the rising and setting of the sun and other stars. Second is the reign of Kronos (269a7–8). Third and final is the story that people in the past were "earthborn" (*gēgeneis*) and did not reproduce from one another (269b2–3). The Stranger goes on to explain (269b5–c2) that all three, along with innumerable even more fantastic things, are "the result of the same occurrence" (*ek tautou pathous*), which is the reversal of cosmic motion caused by the alternating presence and absence of a controlling god (269c4–d3). The structure of the myth (and the cosmic processes that it describes) are notoriously difficult to get straight, but its main points can be summarized as follows:[3]

1 At 268b8–e2, the Stranger indicates that the myth will provide a means of distinguishing the statesman from others claiming his role. At 274e–275c, he indicates that the myth has helped to clarify three things. First (274e10–275a2), the previous definition had confused the divine shepherd from the reverse rotation with the statesman from the current kind of era. Second (275a2–6), the previous account failed to examine the manner in which the statesman rules. Third (276b8–c4), a significant difference between the divine shepherd and the statesman is that the latter is much more like his subjects in terms of nature and education.

2 I render *mythos* as "myth" rather than "story," as acknowledging the Stranger's desire to situate his own narrative within a broader mythic tradition. All translations are my own.

3 Van Noorden (2015, 147–8) emphasizes the apparently deliberate complexity of the myth's cosmic narrative, usefully contrasting it with the explicit ordering of Hesiod's Myth of the Races in the *Works and Days*. See also Rowe 2010, 312.

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1. God sometimes guides the revolution of the universe and sometimes lets it go, so that it revolves of its own accord (*automaton*). When god accompanies the universe, it revolves in one direction; when he lets it go, it revolves in the opposite direction (*eis tanantia periageitai*), a movement "inborn in it from necessity" (*ex anankēs emphyton*) (269c4–270a8).
2. The life cycle of creatures on earth, and specifically the processes of ageing and generation, track the direction of the universe. When it moves as it currently does, the ageing and generative processes are as we currently experience them to be (273e6–274b1); when the universe moves in the opposite direction, the processes of ageing and generation are in some sense the reverse of those we experience: the result is an age of the "earthborn race" (*to gēgenes genos*), "returning again from the earth" (ἐκ γῆς πάλιν ἀναστρεφόμενον) and appearing to age backwards (from our perspective) (270c11–271c2).
3. The way of life during the so-called "Age of Kronos is different from our own way of life, in what is called the "Age of Zeus" (272b2: τόνδε δ᾽ ὅν λόγος ἐπὶ Διὸς εἶναι). In the Age of Kronos, humans have their needs catered for by the gods and live a life of leisure. In the Age of Zeus, we live without the direct help of the gods and must rely on innovation and skill (271c8–272b2; 274b5–e1).

Much of the disagreement surrounding the myth centers on the question of how these three elements relate to one another.[4] In particular, scholars have disputed the way that the Ages of Kronos and Zeus map onto the forward and reverse revolutions of the cosmos and how this relates to the influence of the divine in our current lives.[5] My aim in this chapter is certainly not to claim to

4 Against the traditional "two-stage" interpretation, Brisson (1995), Rowe (1995; 2010), and Carone (2005, 124–61) all argue for a three-stage cycle, in which the world revolves in the same direction in both the Age of Kronos and the Age of Zeus, with a third, distinct, period of "reverse" rotation. See Verlinsky (2008; 2009) and Gartner and Yau (2017) for detailed criticism of these three-stage interpretations.

5 Brisson (1995) interprets the Age of Zeus as one in which god continues to direct the revolution of the cosmos, although humans no longer benefit, as they did in the Age of Kronos, from the care of *daimones*. Rowe (1995, 13, 188) suggests that the notion that the cosmos must always move in reverse when left to its own devices is inconsistent with its status as a rational creature (269d). He reads the Age of Zeus as one in which the cosmos revolves under its own steam, but in the same direction as under god's guidance. Carone (2005, 124–45) argues that, although the Age of Zeus is one of increasing autonomy for humans, it is still the case both that god directs the cosmos and that the gods are involved in tending to humans. The standard interpretation takes the Ages of Kronos and Zeus to map onto periods of cosmic revolution in opposite directions (a reading for which 274e10–275a2 provides strong justification), with god (and the *daimones*) absent from the Age of Zeus.

present a definitive answer to these questions.[6] In fact, I will suggest that the myth both encourages and resists our urge to divide the cosmos up into neatly aligned cosmological, theological, and temporal phases and to clearly identify our current place within the cycle. As we shall see, the Stranger prompts us to think of ourselves as more than simply creatures of the "Age of Zeus," and to adopt a broader perspective on our nature as humans imitating the divinely created cosmos.

1.2 The Times We Live In

Where, or rather when, do we fit into the myth? We can approach this question in two related ways. The first is to ask what the Stranger has to say about "us." The second is to ask what he has to say about "now." In answering both these questions, we will see the degree to which the Stranger pushes the boundaries of our conception of our place within the cosmos.

Although this is perhaps not surprising given its status as a myth, it is notable that the Stranger has relatively little to say about the present era or those who live in it in their own right (as distinguished from other times or phases).[7] At 270c4–5, he suggests that the reversal of the direction of the cosmos will lead to great changes "for those of us who live in it" (τοῖς ἐντὸς ἡμῖν οἰκοῦσιν αὐτοῦ). Here the reference is clearly not to "us" in the sense of "human beings in the here and now," but rather to all creatures who live in the cosmos and experience the consequences of any of its recurrent cosmic reversals.[8] This sense of community across cosmic phases is further demonstrated by the Stranger's account of the process of reversal at 270c11–d4. There, he explains that, when the cosmos changes the direction of its revolution, "widespread destruction afflicts the other creatures, and humankind in particular survives only in small numbers" (καὶ δὴ καὶ τὸ τῶν ἀνθρώπων γένος ὀλίγον τι περιλείπεται). Clearly, the emphasis here is on the destruction caused by reversal, but it is made explicit that humankind *persists* through this enormous, destructive alteration,

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6 While I am generally inclined to prefer the traditional two-stage interpretation, primarily on the basis of 274e10–275a2, three-stage readings do a great service in demonstrating both that the Stranger's myth resists easy interpretation and that the degree of divine presence or absence in the different phases is less clear than is often assumed by two-stage readers.

7 Many of the Stranger's references to "now," in the sense of "the present day" relate to "the stories we now tell." I will delay discussion of these references, turning to them in the discussion of the Stranger's reflections on and construction of the continuity of myth across eras below.

8 See Rowe 1995, 190. Note that the Stranger's narrative fluctuates between referring to humans with the second and third person.

albeit in small numbers.[9] A similar implication can be found at 270d6–271a1 where, rather than describing the origins of an entirely new race, the Stranger describes the *reversal* of those who survive the cosmic upheaval:

> First, the age of each and every creature, whatever it was, stood still, and all mortal things stopped growing older in appearance, and then changed back in the opposite direction, and grew, as it were, younger and more tender.

Similarly, at 273e8–11, the Stranger describes cosmic reversal as bringing about the biological reversal of those then alive, rather than originating a new race as such:

> For those creatures that were about to disappear due to smallness began to grow, and those bodies newly born from the earth already grey-haired began to die again and return to the earth.

Despite their opposite ways of ageing and generation, the people of different ages are, in some sense, continuous with one another. In fact, it is our continuity that demonstrates the significance of the reversal—it is a matter of *our way of life* going in one direction and then the other, tracking the cosmos through its various alterations.

At 271a7–b1, in contrast, the Stranger refers to "our first ancestors" (*hoi hēmeteroi progonoi*), thereby distinguishing the "us" of the present era from the earthborn race of the previous era whose stories they remembered. Even here, however, we see an emphasis on the closeness of our ancestors to their predecessors, noting that they were "neighbors" (*egeitonoun*) to those who lived in the previous cosmic phase. This notion of continuity (or community) across the ages is further developed by the description of our situation within the current era at 274b4–e1. At the beginning of this passage, the Stranger details the unfortunate consequences of mankind having been deprived of the god who tended to "us" (τῆς γὰρ τοῦ κεκτημένου καὶ νέμοντος ἡμᾶς δαίμονος ἀπερημωθέντες ἐπιμελείας). This "us" must incorporate both the deprived inhabitants of the Age of Zeus and those who lived in the Age of Kronos, since it is they who previously enjoyed the privilege of being cared for by the gods.[10] Again, at

9 See also 273a3–4, where we are told that the reversal of the cosmos in the opposite direction brought about the destruction of "all kinds of creatures" (*zōōn pantoiōn*) as opposed to outright the destruction of all creatures.

10 274b5–c4 shifts from talking about "us" (*hēmas*) as the erstwhile subjects of divine care to discussing the difficulties faced by *anthrōpoi* in the third person plural (*diērpazonto,*

274d2–e1, the myth's final reference to our place in the cosmos, as its imitators and followers, has a broad scope, referring to "us" as living and growing in one way and then the other at different times (νῦν μὲν οὕτως, τοτὲ δὲ ἐκείνως ζῶμέν τε καὶ φυόμεθα), i.e., across the different phases of the cosmos.

As this survey shows, although the Stranger does sometimes seek to distinguish the "us" of the Age of Zeus from those who have gone before, he also, and in fact more frequently, expands the sense of "us" to refer to a community of humans (or even living things) who in some sense endure throughout the individual phases of the cosmic cycle. As 274d2–e1 makes clear, we are both *hoi nun* and *hoi tote*.

In fact, the Stranger often broadens the scope of "now" in a manner similar to that which we have seen for "us." At 270b7–8, for example, he states that "the motion of the universe is sometimes in the direction in which it is now rotating [ἐφ' ἃ νῦν κυκλεῖται], and sometimes in the opposite direction." Here, his interest is not so much in the present day, but rather in cosmic motion *as it happens to be in the present day* and, implicitly, as it is every time the cosmos repeats this part of the cycle of alternating rotations.[11] Again, at 270d1–4 the Stranger promises to describe the upheavals that occur as a result of "the reversal of the universe at the time when its turning becomes the opposite of the one that is now the case [*tēs nyn kathestēkuias*]." This is not an offer to explain what happens when *this particular era* ends, but rather what happens *whenever* (*hotan*) the cosmos starts to revolve in the direction opposite to that in which it is currently moving.[12] Likewise, at 271c–d, the Stranger responds to Young Socrates' query as to whether the Age of Kronos "was in those turnings or in these" (c5) by insisting that "it belongs least of all to the movement *that is now the case* [ἥκιστα τῆς νῦν ἐστι καθεστηκυίας φορᾶς]" (d2–3), i.e., to the *direction* in which the cosmos is currently turning, has turned before, and will turn again.[13]

ēsan)—this shift is all the more notable when we consider that the men without expertise belong in the early part of "our phase," whereas the "us" tended by the god belong to the previous phase.

11 See also 269a2–3 "that they [the sun and other stars] used to set in the place from which they now (*nyn*) rise."

12 As at 274d6–e1.

13 The MSS have a further, notoriously difficult *nyn* at 271d4. I accept the emendation of the OCT, as defended by Robinson (1995, 45–46), which reads *d'au* in place of *nyn*. See Verlinsky (2009, 233–39) for a detailed discussion of the alternative readings and their significance. The possibility that there remains some kind of divine influence in the current age is compatible with my emphasis on the continuity between different phases. Nevertheless, it is unsatisfactory to suggest, as the MSS reading might seem to do, that god or the lesser gods are active in the present era in *the same way* as they were in the Age of Kronos, given that the cosmic phases are *primarily* distinguished by the presence or absence of god and the gods.

The Stranger's most explicit references to the present within the myth (apart from those referring to present attitudes towards storytelling, which I discuss below) come, perhaps unsurprisingly, in his comparison of the Ages of Kronos and Zeus. At 272b2–4, he asks Young Socrates if he is able to judge whether the way of life he has described as belonging to the Age of Kronos is more fortunate than "this way of life, which is called the Age of Zeus, *the one now*" (τόνδε δ᾽ ὃν λόγος ἐπὶ Διὸς εἶναι, τὸν νυνί), pointing out this is a way of life of which Young Socrates has direct experience. Note, however, that the Stranger is referring here to *the way of life* (*ho bios*) in the present, rather than to the present day or the people who live in it.[14] This leads to the Stranger's only specific reference to "those who live now" at 272b8–c5, in his conclusion that, if those in the Age of Kronos did engage in philosophy, it will be easy to judge that *hoi tote* were far more blessed than *hoi nun*. In fact, as we have seen, insofar as the Stranger talks about the present day, he generally does so as a means of making reference to a certain state of affairs (sometimes cosmic, sometimes anthropological) either for its own sake or for the sake of comparison, rather than in order to describe the present itself.

As we saw in considering his references to "us," the Stranger's interest in "the now" tends to be relatively general, picking out either the (re)current direction of cosmic motion or the way of life that is (presumably repeatedly) aligned with it. This is significant for what it implies about the place of our present era within the myth. For it suggests that *this* so-called Age of Zeus is neither unique nor enduring. It is not unique, because this "now," in which the universe revolves as it currently does, is merely one iteration of its revolving in this direction.[15] It is not enduring because it is limited at either end by the inevitability of cosmic reversal. The present day is thus repeatedly presented as just one *temporary* phase among countless such phases, in which the universe has revolved and will revolve in the same direction as it currently does. In a sense, then, the Stranger is thinking about "now" as a circumscribed length of time. But this circumscription is relatively generous, insofar as it covers the entirety of the time between the previous cosmic reversal and the next. It is

14 Similarly, 271e6 makes reference to men "now" (*nyn*) to enable a comparison with the herding activity of god in the Age of Kronos.

15 As is confirmed by the assertion at 274d6–7 that we follow the direction of the cosmos "for all time" (*ton aei chronon*). One may wonder whether we should regard repeated iterations as identical to one another, prompting questions of time and identity such as we find in Stoic accounts of the cosmic cycle. The myth says nothing explicit on this issue, but the fact that some creatures or souls survive and progress across cycles suggest that, in this way at least, individual iterations are not identical: for each new cycle will contain creatures who have endured through a greater number of reversals.

also relatively general, insofar as the Stranger's conception of "now" sometimes seems to work as a shorthand for every such period between two reversals in which the cosmos revolves in the same direction as it currently does. Further, since, as we have seen, his conception of "us" tends to expand beyond the current cosmic phase, the Age of Zeus is not obviously even "our" age, given that "we" will in some sense outlast it. It is, in fact, just one of many such phases that "we," broadly construed as the creatures that endure through cosmic reversals, will experience. This era may be our present, but we have a future and a past that extend beyond it.

This relatively generous and general conception of "now" is nothing compared to what the Stranger has to say at 273b3–7. Describing the gradual disintegration of the cosmos left to its own devices, the Stranger explains:

> To begin with, it achieved it more accurately, but eventually it did so more dully. The cause of this was the corporeal part of its mixture, its companion since its origin long ago, because it was affected by great disorder before it came to have *the present order* (πρὶν εἰς τὸν νῦν κόσμον ἀφικέσθαι).

Here, the Stranger refers to "the present order" not to pick out the turning of the universe in its current direction, but to refer to *the cosmos itself* as it has existed since the moment of its creation by god.[16] Whereas, previously, we have seen that he conceives of an entire phase of cosmic motion in a particular direction as "now," here we see the Stranger talking about the entirety of time since the creation of the cosmos as "now."

Of course, there is no particular inconsistency in talking about "now" in narrower and broader terms in different contexts, or even at one and the same time. We can perfectly consistently and coherently talk about this precise moment, this decade, and this particular century as "now." What is striking about the Stranger's use of "now" within the myth, however, is that, just as in his use of "we," he seems to have a preference for the broader and more general conception of "now" over the narrower. It is certainly notable that his broadest "now," which is "all the time that the cosmos has existed", is so broad as to stretch the sense of the term beyond its natural limits.

It is worth taking the time to reflect on what the myth tells us about ourselves and our place within the cosmos. Certainly, the Stranger does sometimes draw contrasts and comparisons between "us" and "them," and "now" and "then."

16 As noted by Rowe (1995, 195).

But, more often, he treats "us" as continuous or unified with "them."[17] And his "now" is always, to a greater or lesser extent, expansive, sometimes picking out *this* Age of Zeus, sometimes all such cosmic phases, and sometimes the entire history of the cosmos. Where does this leave us in understanding the nature of humans? It suggests that, for all that we may sometimes think of ourselves as the particular creatures of a particular age, we must also recognise our position as creatures who belong to the cosmos as a whole, and who persist in some way throughout its history.

1.3 God and the Cosmos

Why does the Stranger use his myth to situate our experience, and self-conception, within such a broad chronological and cosmological context? In referring to "cosmic motion as it is now," he is clearly seeking to draw a contrast between two ways of life that fall under alternative cosmic rotations.[18] The cosmos moves in one direction, and our way of life tracks, and indeed is explained by, that motion. When the cosmos reverses, our way of life reverses to track the cosmic motion in the opposite direction. We thus understand our own society and way of life by comparing and contrasting it with the way of life of those living in a cosmos in reverse (from our point of view), as has often been emphasized by readers of the myth.[19]

As we have seen, however, it is actually *us*, in some broad sense, who live the reverse life under a reverse cosmos. The way that the Stranger frames his broadest context on a cosmic scale encourages us to think of ourselves not just as contrasted with those in opposite ages, but also as continuous with them, i.e., as creatures who have endured—living alternating and opposing ways of life at different times—throughout the history of the cosmos. Whereas the narrower "now" of life "under the cosmos moving in one direction" may

17 I thus want to resist McCabe's (2000, 155–56) emphasis on the independence of the two ways of life described in the myth. She dismisses (n. 69) the connection established by having our ancestors report the story of the previous age as "necessary for the telling of the story itself." I suggest that, as one of several deliberate examples of continuity, this connection is not so easily dismissed.

18 As I think 274d2–e1 makes clear.

19 See, for example, Lane 1998, 101–17. Although she (115–16) talks of "the temporal and cosmic gulf between our own world and the possible world of Kronos," she also notes that the nurslings of Kronos are humans, "precisely not treated as a different species." Lane suggests this point of continuity enables the myth to emphasize the irrelevance of nostalgia for a way of life that belongs to a different epoch.

encourage us to think of ourselves as creatures specific to a particular age (or kind of age), the broader "now," like the broader "we," encourages us to reflect on our status as creatures of the cosmos as a whole. In this respect, I suggest, we are further prompted to consider our relationship to the designer, creator, and (to a greater or lesser degree) director of that cosmos. The broader perspective of the Stranger's cosmic myth encourages us to think of ourselves as creatures of divine design on a macrocosmic scale, even as it reveals that the direct influence of god is only intermittently felt in our way of life.

I noted above that the Stranger's broadest "now" at 273b3–7 refers to the entirety of time since the origin of the cosmos "long ago," prior to which there was a great disorder. Elsewhere, the Stranger makes clear that we should understand this origin as a product of divine design and creation. At 269c4–d2, he sets out the central claim of his story:

> At times, god himself accompanies the universe as its guide and aids it in revolving. At other times, however, he releases it, whenever its cycles have reached the measure of time appropriate to it, and of its own accord it turns back in the opposite direction, since it is a living creature and was allotted intelligence by the one who fitted it together in the beginning [ἐκ τοῦ συναρμόσαντος αὐτὸ κατ' ἀρχάς].

At 269d7–9, the Stranger tells us that "that which we have come to call 'heaven' and 'world order' [*ouranon kai kosmon*] has a share of many blessings from its progenitor [*tou gennēsantos*]." The creator of the cosmos is elsewhere referred to as its "craftsman" (*dēmiourgos*, 270a5, 273b1), "father" (*patēr*, 273b2), "constructor" (*ho syntheis*, 273b7), "the god who ordered it" (θεὸς ὁ κοσμήσας αὐτόν, 273d4), and, in one of the most striking images of the myth, as the "helmsman of the cosmos" (τοῦ παντὸς ὁ κυβερνήτης). This god, then, is not only the divine companion and cause of its rotation in one direction, but also the cause of the cosmos' existence and progress *as a whole*.[20] This means that any creature within it can justifiably be conceived of as part of the divine cosmic design, including those who live in periods when god is not directly active in guiding

20 I thus disagree with El Murr's (2009, 296) suggestion that the cosmic cycle in the *Statesman* is an "anti-teleological device." Nevertheless, I agree with his broader point, that the attempt to establish the details of the Stranger's myth by trying to render it consistent with the cosmology of the *Timaeus* is an interpretative red herring. Comparisons with the *Timaeus* are often made with the specific purpose of establishing the nature of Plato's cosmological doctrine. That project lies outside the scope of this chapter, which seeks to read the myth of the *Statesman* on its own terms within its dialogue.

cosmic rotation. Further, if we conceive of ourselves as creatures who have endured periods of both divine intervention and cosmic autonomy throughout the history of the cosmos—as the myth indicates we should—our status as creatures of design becomes all the more significant, since that endurance must itself be part of the design.[21]

Now, some may object that, even if we acknowledge god's creative activity at the macrocosmic level, the fact remains that the Stranger's myth emphasizes the periodic absence of god and the resulting cosmic autonomy. Whilst the cosmos and the creatures within it may be the products of divine design, the myth explicitly frames the Age of Zeus as one of divine retreat—in fact, it is in the absence of divine care that mankind develops its own autonomy (274b–e).[22] Here, I think we would do well to consider the fact that the enduring influence of divine design on a macrocosmic level is perfectly consistent with periodic cosmic (and human) autonomy. In fact, the phenomenon of autonomous cosmic motion independent of god is, in itself, the product of the divine creative activity that was the origin of the cosmos.[23] As the Stranger makes clear at 269c4–d2, whilst the *backwards direction* of the autonomous cosmic motion results from necessity, the fact that it revolves under its own steam is the result of its being "a living creature [...] allotted intelligence by the one who fitted it together in the beginning."[24]

We can, I think, consider the analogy of a toymaker who has designed and created a wind-up toy. As he winds the toy up, he is, as it were, accompanying and directing the motion of the toy. When he lets go of the toy, he is no longer acting on it directly, but the fact and influence of his original act of design and creation remains and, indeed, *causes* its ongoing motion (with some influence from the restrictions resulting from its material nature). The toymaker has retreated, but that is not to say that the toy is no longer his creation, or that it is no longer moving under his influence. Indeed, the very fact that it is able to

21 The significance of our status as creatures within a created cycle is emphasized by a comparison with Empedocles' cosmic cycle, which appears to have no first iteration.

22 See note 5 above for a summary of three-stage interpreters' individual positions on the presence or absence of the divine cosmic guide and lesser gods.

23 See 274a3–b1, where we are told that the cosmos was "instructed" (*prosetetakto*) to take control of its own motion (just as the parts of the cosmos were instructed to take control of their own processes of conception, birth, and nurture so far as was possible).

24 Which is not to say that god turns it now in this direction, now in the other—this is ruled out at 270a1–2. 269d5–270a8 tells us that, whilst it is *body* which necessitates motion (as opposed to constantly staying the same, which is only for the most divine things), the kind of motion that the cosmos manifests is the closest to stability that is possible for it. See Rowe 1995, 188 and Lane 1998, 104.

move in the opposite direction under its own steam is *because* it is the product of intelligent design.[25] Similarly, in whichever direction the cosmos is revolving, and whether directly accompanied by god or not, its motion is always, in some more or less obvious and direct sense, the result of a divine act of design and creation.[26]

At this point, it is worth noting two things about the Stranger's description of god's interaction with and withdrawal from the cosmos. First, we should note that god's retreat is not presented as a matter of total abandonment. At 272d6–e6 the Stranger tells us that, when the "helmsman of the cosmos [τοῦ παντὸς ὁ κυβερνήτης]" let go of his creation, he "went away to his observation post [*periōpē*]."[27] The implication here is that, even when not directly guiding the progress of the cosmos, god remains conscious of and concerned with it. This is further demonstrated by the fact that its autonomous motion, which is described as a process of gradual disintegration (273c–d), is brought to an end by god's return to the helm. Prompted by his "seeing that it is in difficulty" (καθορῶν ἐν ἀπορίαις ὄντα, 273d4–5) and being "concerned" (*kēdomenos*) that it should not reach the point of total dissolution, god once again takes the helm. It is clear, then, that god not only creates the cosmos and periodically guides its revolution, but also sets (recurrent) limits on the duration and extent of its cosmic reversals. Each individual reversal is thus either the product of god's letting the cosmos go, or of his return to the helm. In both cases, the direction of cosmic revolution results, in some sense, from divine activity or intention.

Second, the Stranger suggests more than once that the duration of the individual phases should also be regarded as part of its design. At 269c6–7, for example, he explains that god releases the cosmos "whenever its cycles have

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25 I fully admit that this is analogy imperfect, not least because the cosmos possesses intelligence in a way that the wind-up mechanism does not. But it brings to the fore the important fact that the "autonomy" of the cosmos as it moves by itself is the result of its being designed to do so.

26 It is not, therefore, quite true to say, as El Murr (2009, 277) does, that (on the two-stage interpretation) "the world is *either* controlled by god, *or* is as it is now, with everything happening in a way contrary to that in which it would happen in a divinely ruled universe." It may be true that this current universe is not "ruled" by the divine in the same manner, but it is important that it is *designed by god* to rule itself.

27 In a Homeric context, the περιωπή seems to be a position of active spectating. At *Iliad* 14.3–8, Nestor announces that he will seek a look-out to find out what is happening on the battlefield, drawing a contrast with Machaon's detachment. At *Iliad* 23.450–1, Idomeneus is the first to catch sight of the chariots, because of his superior and separate position. At *Odyssey* 10.144–7, Odysseus seeks a vantage point to look for humans. See Brisson (1995, 357–58) on the possible location of the observation point. On the tradition of a divine cosmic helmsman, see Gregory 2016, 108-10.

reached the measure of time appropriate to it [ὅταν αἱ περίοδοι τοῦ προσήκοντος αὐτῷ μέτρον εἰλήφωσιν ἤδη χρόνου].” Whilst this is not an explicit claim that the divine creator decided the appropriate measure, it is hard to see from where else such an assessment could come, especially when we remember that the phase measured here is that in which god accompanies the motion of the cosmos. Similarly, at 272d6–e6, we are told that the end of the age of earthborn men comes when that race “has been used up [*anēlōto*], with each soul having gone through the births assigned to it [*apodedōkuias*], falling to the ground as a seed as many times as had been allotted to each [ὅσα ἦν ἑκάστῃ προσταχθέν].”[28] Time is not simply a phenomenon of cosmic motion; it is measured in reference to and as part of the divine design of the cosmos. Even the process of the reversal of the cosmic revolution is described as taking place for a “sufficient time” (*hikanos chronos*) at 273a4, suggesting that the widespread destruction that takes place during the reversal is itself part of the design of the cosmos as a whole.

We have seen that, for all that it draws a significant contrast between the “present” Age of Zeus and the previous Age of Kronos, the Stranger’s myth also repeatedly encourages us to think of ourselves as more than simply the particular creatures of a specific phase of the cosmic cycle. We have also seen the ways in which the Stranger points to the status of the cosmos, and—significantly—*all* the phases of its cycle, as products of more or less direct divine design or intervention. Thus, in thinking of ourselves as creatures enduring throughout these phases and their destructive reversals, we are also encouraged to consider ourselves as part of the overall, macrocosmic design.

1.4 Mythic Time

Up to this point, I have been considering what the Stranger’s myth says *about* time and the cosmos and our place within it. I have suggested that the myth’s narrative encourages us to adopt both a narrower and, significantly and frequently, a broader perspective on our place within the progress of the cosmos and our status as creatures of divine design. I want now to turn to how the *telling* of the myth, and the Stranger’s reflections on the place of storytelling within his own story, introduce some further nuances of time and identity, particularly in terms of the relation between time, myth, and memory.

28 See Verlinsky (2008, 73–77) for the suggestion that the limit on the sowing of souls is a result of the fact that the generation in the earthborn era is, in fact, *regeneration* of those who died in the autonomous era.

The *Republic* and *Timaeus* both suggest that mythic discourse is a means for dealing with matters that are impossible to verify.[29] We can and should use myth when the things we wish to describe are too far in the past for us to be certain or because they are in the realm of divine activity, and thus beyond human certainty.[30] Something similar can be said of the myth of the *Statesman*, insofar as the Stranger is talking about times long past, at least in the case of the Age of Kronos (and, perhaps, the beginning of our own Age of Zeus) and the origin of the cosmos itself, and about divine activity, in describing god's design and direction of the cosmos. When we look at what the Stranger himself has to say within his story about the nature and use of myth, however, we can see that this is more than a matter of simply settling for myth as taking us beyond the rational limits of argument.[31] Just as the Stranger's myth encourages us to understand our cosmic continuity, so his conception of mythic history itself blurs the boundaries between the present and the mythic past and future in a way that tells against our desire to impose strict temporal or cosmic divisions.

At 268e8–11, the Stranger asserts that the inversion of the setting and rising of the sun is just one of the "many events that have been recounted over the years [*tōn palai lechthentōn*]" that "have happened and will happen again [ἦν καὶ ἔτι ἔσται]." From the very outset, the Stranger draws attention to the fact that his myth is not just about times long past, but about the future too, i.e., it is a myth fit for a cyclical cosmos. Not long after this, at 269b5–c2, he explains the connection between the myths of Atreus, the Age of Kronos, and the race of the earthborn, and notes that these are only a selection of similarly related phenomena:

> Well, all these things are the result of the same occurrence, as are countless others even more remarkable than these. But, because they happened a long time ago, some have been forgotten, and others have been reported in a scattered fashion, as separate stories. But no one has spoken of the event that is the cause of all these things, and I should tell it now. For recounting this will be appropriate to our exposition of the king.

Here, the Stranger places himself within a common tradition of recounting events that are long past, setting himself up as a rival to other previous mythologizers.[32] In doing so, he claims to be in possession of a *new* story which will,

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29 This is a point I emphasize in discussing the *eikōs mythos* of the *Timaeus* in Bryan 2012, 177–83.

30 See *Resp.* 382c10–d3.

31 See McCabe 2000, 149–59.

32 Not least, of course, Hesiod. See El Murr 2009 and Van Noorden 2015, 142–60.

in itself, serve as the explanatory foundation of numerous other pre-existing myths.[33] And, as becomes clear in the myth's development, it is a story which is about the present (insofar as it describes the ongoing alternation of cosmic revolutions and why we now live in the way we do), the past (insofar as it describes the origins of the cosmos as informing that ongoing process of alternation, and how that process has affected us over time), and the future (insofar as it situates the present direction of the cosmos as a temporary phase to be replaced with its opposite).[34] This is not just a myth of origins, but of present and future progress, change, and continuity.[35]

This sense of mythic continuity is further developed by the manner in which the Stranger narrates his cosmic story. At 269c4–270a8, he gives his first account of the cosmos and its reversals in the present tense, as is appropriate given that he is describing the enduring nature of things.[36] Having described the great upheaval of cosmic reversal in the present tense at 270c11–d4, the Stranger switches at 270d6 to past tenses to outline the effects of that reversal, first explaining how the age of each creature "stood still [*estē*]" (d7) and how mortal creatures "ceased" (*epausato*) progressing towards visible old age.[37] This shift into the narrative past is all the more notable for the fact that it is being used to describe events that have been introduced as *coming after* the present (kind of) age at 270d2–5 ("when its turning becomes the opposite of the one that is now the case"). Here then, the cyclical nature of the cosmos means that the Stranger can plausibly describe our future *as our past*. In doing so, he once again demonstrates our continuity across time or, at least, tacitly challenges our urge to neatly distinguish one era (and race) from another.

33 In fact, this new story is older than the disparate versions retold by others, because it more accurately represents the stories of our ancestors at the beginning of this age.

34 The myth's concern with the future is made clear at 270d1–4, where the Stranger introduces his account of the (kind of) reversal that comes at the end of phases such as the current one. Contrast the cyclical future (and past) of the Stranger's myth with the more pessimistic and unidirectional future set out at the end of Hesiod's Myth of the Races at *Theogony* 176–201.

35 Miller (2004, 36) reads the passage at 268d–9d as the Stranger "declaring that men have lost an awareness of the unity of cosmic history."

36 See Rowe (1995, 187) on *anēken* (269c5) as a gnomic aorist, expressing recurrence.

37 Rowe (1995, 190) explains the change of tense as motivated by the decision to "describe what is apparently a recurring set of phenomena by reference to a particular occurrence of it—no doubt the one nearest to it in the past." On a two-stage reading, the description here is of the reversal of the *current sort of phase*, i.e., the beginning of the next phase, so that the end of this phase (in the future) would presumably be closer than the end of the previous such phase.

The way that the telling and retelling of myth blurs—or extends across—cosmological and chronological boundaries is neatly encapsulated by the Stranger's answer to Young Socrates' query about reproduction in the reverse age at 271a4–b3:

> It is clear, Socrates, that reproduction from one another was not part of the nature of things *then* [*tote*], but it was the earthborn race, which is said to have existed *at some time* [*pote*], which existed and came back to life [*anastrephomenon*] out of the earth *at that time* [κατ᾽ἐκεῖνον τὸν χρόνον]. And it was remembered by our first ancestors, who were, *in the next period* [*ton hexēs chronon*], neighbors to the end *of the previous period* [τελευτώσῃ τῇ προτέρᾳ περιφορᾷ], but born at *the beginning of this one* [τῆσδε κατ' ἀρχὰς ἐφύοντο]. And these men became the messengers of these accounts for us, accounts which are *now* [*nyn*] wrongly disbelieved by many people.

Here the Stranger talks of both "then" (i.e., the time of the earthborn race) and "now" (i.e., the time when many people wrongly judge stories of the earthborn to be false). The time between "then" and "now" is part of "our age"; it is a time in which the cosmos has shifted to its current direction and in which "*our*" first ancestors have come to be. But it is also, in at least one significant way, closer to the previous age than to us, not just because our ancestors were "neighbors" to the earthborn, but because they enjoy a continuity of memory with their predecessors that is in stark contrast to the widespread denial of their accounts by those who hear them "now" (where "now" is much narrower than we have previously seen it to be).[38] On the one hand, the Stranger's myth describes the continuity of our ancestors with their predecessors in the reverse age. On the other hand, the Stranger identifies the myth itself, and the events that it memorializes, as a source of that continuity. It is myth that enables us to situate ourselves within the extended history of the cosmos and to understand the significance of the fact that we share the vestiges of the memory of earlier creatures, who live in a way apparently opposed to us, whilst also in a sense *being* us. The Stranger rebukes us (i.e., his contemporaries) for failing to maintain the memory preserved by our ancestors in this age, a memory that demonstrates our continuity with those who came before and lived in a different way.

38 See Ferrari (1995, 394–95) for the suggestion that the memory of our predecessors in the previous era helps us, in this era, to develop our ability to care for ourselves.

It is important that, whilst the Stranger does lament the fact that many nowadays wrongly disbelieve these stories, he also leaves room for the possibility that some, presumably including himself, continue to represent things correctly. At 269b5–c2 he notes that time can erode and fracture our mythic memory.[39] But his unified myth is, in itself, evidence of the possibility of resisting such tendencies. We need not lose sight of our status as creatures of the cosmos in general, as opposed to merely being creatures of the Age of Zeus. Nor should we lose sight of the fact that it is myth that enables us to construct our understanding of that status. At this point it is worth remembering that, from the outset, the Stranger presents his story as unifying disparate strands of traditional myths. The myth of the *Statesman* is an attempt at establishing both mythic continuity, in explaining the causal connection between apparently discrete myths, and cosmic continuity, in narrating the connection between the inhabitants of different ages, a connection which is itself partly explained and manifested in mythic memory.

The idea that myth itself is an indicator of cosmic and chronological continuity is also found in the discussion of the Age of Kronos at 272c5–d2. There, the Stranger develops his own answer to the question he posed to Young Socrates as to whether the way of life in the Age of Kronos is more blessed than that of the Age of Zeus:

> But if they spent their time stuffing themselves with food and drink and conversed with one another and the animals, telling stories of the kind that are told about them nowadays [μύθους οἷοι δὴ καὶ τὰ νῦν περὶ αὐτῶν λέγονται], this too, in my opinion, will be very easy to judge.

It is hard to know to which contemporary stories the Stranger is referring. It seems unlikely that the nurslings of Kronos told stories of *their* predecessors in the previous age in the way that we tell stories of them since, at 272a2, we are told that they came back to life from the earth "remembering nothing of the past" (οὐδὲν μεμνημένοι τῶν πρόσθεν).[40] It seems likely that they therefore tell stories about *themselves* such as we now tell about them, but does this mean that they told only the partial and erroneously disparate stories that

39 Note the parallel with the gradual failing of the intelligence of the cosmos. See Ferrari 1995, 394 n. 18.

40 Miller (2004, 43) reads this as a reference to the symbolic use of the Age of Kronos in post-Hesiodic literature, especially comedy. Ferrari (1995, 393–94) emphasizes the fact that the nurslings of Kronos lack memory as a significant point of contrast with those who live in the Age of Zeus.

the Stranger is seeking to correct?[41] In that case, the Stranger would seem to be considering the possibility that the nurslings of Kronos understood themselves as poorly as we understand them. In fact, however, insofar as he is asserting the similarity in kind between their stories and ours, this passage and its context hint at a continuity of discourse between the Age of Kronos and the Age of Zeus. Either the nurslings of Kronos engaged in philosophy (272b8–c5) or they indulged in telling the same sort of stories as are currently told. Either way, there will be some similarity to (some of) those who live in the current era. The Stranger goes on to suggest at 272d2–4 that a better account of these past events may only arrive in the future:

> All the same, let us leave aside these matters, until such time as someone should appear who is equipped to inform us [ἕως ἂν ἡμῖν μηνυτής τις ἱκανὸς φανῇ] in which way the people then felt enthusiasm for knowledge and the use of words.

It is notable that the Stranger indicates the possibility that someone may come later who will be up to the task of correctly describing the events of the (by then, even more distant) past. This may be a reminder that, as is presumably the case with the Stranger, it is possible for some to resist the deterioration of mythic memory that comes with the passing of time. Or perhaps he anticipates an informer in a future "Age of Zeus," who will be chronologically close enough to his earthborn predecessors (i.e., those living between this iteration of cosmic motion in the current direction and the next) to describe correctly their way of life, in the way that our own "first ancestors" did in the past. In that case, the question returns as to whom we should understand to be the "us" to whom this future informer will present his description. On this reading, the Stranger would be again extending the scope of "us," to include at least those in a future Age of Zeus, and thereby unifying the different ages as the potential audience for myth.

Scholars have often pointed to the notion of self-sufficiency as central to understanding the difference between ourselves and the nurslings of Kronos, who, we are told, were pampered by the gods (272a2–b1). And yet, even here, we find a hint of the importance of mythic memory and continuity across the ages. We have already noted that the divine aid that is withdrawn is described as something that *we* had previously enjoyed (274b). Not long after, at 274c4–d2,

41 See Rowe (1995, 194), who also notes the possibility that the Stranger is referring playfully to his own story.

the Stranger describes how we have been able to overcome the difficulties and dangers that initially resulted from the changed circumstances in which humans found themselves after the withdrawal of divine care:

> On account of all this they were in great difficulties.[42] And this why we have been given the gifts from the gods that are spoken of in ancient accounts [ὅθεν δὴ τὰ πάλαι λεχθέντα], along with the necessary teaching and education: fire from Prometheus, crafts from Hephaestus and his fellow craftswoman, seeds and plants from others.

It is perhaps surprising that the Stranger talks of the gifts of the gods while describing an age he has just characterised as distinct in its lack of divine aid. Some have suggested, as a result, that we should not assume that the Stranger is himself endorsing the ancient reports.[43] Alternatively, we can read this passage as once again blurring the distinctions between ages. Ours is an age in which the gods are absent, and yet we talk of their aid as the (partial) cause of our flourishing. If the stories are true, it seems the distinction between the Age of Zeus and the Age of Kronos is not quite so stark, insofar as we are not entirely deprived of divine support. Even if the stories are false, however, the fact that we repeat them, and talk *as if* we succeed in part through divine aid, may be an example of a fractured memory of our ancestors' stories—a fragile thread of mythic continuity between our age of autonomy and our previous experience of divine care.

Built into the Stranger's reflection on the status of his own myth, we find a notion of collective mythic memory, actualized to a greater or lesser degree at different times, but, in itself, an indication of continuity and connection through recurrent cosmic reversals. Our ancestors in this age had a memory of their (and therefore our) ancestors in a previous age, as do we, albeit to a lesser extent. Our descendants will have a memory, possibly superior to ours, of their ancestors. Relations of precedence and antecedence and the continuity of mythic memory have continued and will continue throughout recurrent cosmic reversals. Understanding our place within the Stranger's myth requires us to understand our connection to our past and future and our place within the history of the cosmos as a whole.

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42 Note that the Stranger shifts here from the third person plural (*ēsan*) to the first person plural (*hēmin*) even though "they" are "us."

43 Rowe 1995, 197.

1.5 Conclusion

I have argued that, although the Stranger's myth undoubtedly establishes a significant contrast between the Ages of Kronos and Zeus, in terms of their ways of life and generation, it also repeatedly frames the relationship between the inhabitants of each age as one of continuity and community. The nurslings of Kronos live a life that is opposite in kind from that which is found in "our" age (if we define "ourselves" in terms of our current way of life), and this is clearly significant for how we understand the current age. If, however, we adopt a broader, cosmic perspective we will recognise that it is *we* who live in different ways in different ages, progressing backwards and forwards in tandem with the motion of the cosmos. This continuity is clear in the narrative of the myth, describing as it does different epochs of a history of humanity that persists through the extreme alterations and destruction of cosmic reversals. It is also manifested in the phenomenon of mythic memory itself. For while the stories we now tell may represent only a fragmented account of our cosmic ancestry, they provide the narrative material out of which a more unified and complete account, such as that offered by the Stranger or such as may come from some future informant, may be constructed. I have also suggested that, in encouraging this broader perspective, the Stranger prompts us to recognise our status as inhabitants of a divinely designed cosmos, even, or especially, in the absence of direct divine intervention in our lives in the current era. In conclusion, I shall make two suggestions as to how this reading may inform our understanding of the function of the myth within the *Statesman* as a whole.

Why, then, might the Stranger want to emphasize continuity and community across the ages? What value is there in suggesting that, for all that we now live a particular kind of life, we have previously lived (and will live again in the future) a very different way of life? I suggest that a partial answer can be found in the Stranger's diagnosis of what the myth has shown about their previous attempt at definition (274e1–5c4). The definition of the statesman as a "herder of men" picked out the divine shepherd in the Age of Kronos, rather than his human equivalent in the Age of Zeus. Here, I think, it is significant that the Stranger asserts not only that the statesman is human, but that he shares the human nature of his subjects and has shared their education and upbringing (275b8–c4). Now, the fact that the Stranger refers here to "the statesmen who are here now" (τοὺς δ' ἐνθάδε νῦν ὄντας πολιτικοὺς) might lead us to assume that the connection is being made with their subjects' nature and upbringing *as creatures of the Age of Zeus*. However, if we adopt the broader perspective repeatedly encouraged by the myth, we can read the statesmen as assimilated

to humans *as they persist through the history of the cosmos*.[44] On this reading, the statesman shares the nature of humans who have lived backward and forward, sometimes coming to life from the earth, and sometimes as a product of sexual generation, sometimes as subjects of divine nurture, and sometimes as members of a society more or less left to fend for itself, but *always* as creatures inhabiting a divinely designed, and therefore good, cosmos. To understand our nature is therefore to understand his.

In fact, the continuity between the two ages is significant for understanding not just the nature, but also the activity of the true statesman. The analysis of statesmanship in the second half of the dialogue gives us several hints that we should connect or compare the statesman with the directing god of the myth. In particular, at 296e4–297a5, the Stranger compares the successful lawgiver with "a helmsman, always keeping watch for the benefit of his ship and sailors," recalling the myth's "helmsman of the cosmos."[45] Again, at 302a3–b3, he notes that states can founder like ships, bringing to mind the myth's description of the end of the period of autonomous cosmic motion. And when we turn to the Stranger's final account of the proper activity of the statesman, we can see how this comparison to god, along with the myth's emphasis on the continuity of the human race across the history of the cosmos, serves a purpose. From 305d6 onwards, the Stranger develops his explanation of the statesman's activity as a matter of combination, "weaving everything together in the most correct way" (305e3–4). Towards the very end of the dialogue, at 309c1–3, we are told that the statesman will achieve the appropriate combination:

> By first fitting together [*synarmosamenē*],[46] in accordance with kinship, the part of their soul that is eternal, using a divine bond, and after the divine, fitting together their mortal part with human bonds.

Some have seen an allusion to the psychological doctrine of the *Timaeus*'s cosmological myth in the references to the eternal and mortal parts of the soul.[47] In fact, the myth of the *Statesman* is all that we need here. For that myth narrates a history of humans as *both* eternal, in the sense that their souls persist

44 Note the assertion at 276b7–c1 that kingly rule is "care over the whole human community together [ἀνθρωπίνης συμπάσης κοινωνίας]."

45 See also 297e8–298e3.

46 Note the echo of the description of the Demiurge's activity at 269c4–d2.

47 Rowe 1995, 243.

through reversals across the ages *and* mortal, in the sense that each individual incarnation, like each iteration of the races, is always temporary.[48]

One question that has often worried scholars is what sense we can make of the pessimistic fact that the myth presents the current age as one in which god is absent from the world and which will eventually end in the near cataclysm of the next cosmic reversal.[49] In fact, however, the myth tells us that god's absence is part of the divine design of the cosmos, as is the fact of repeated destruction and renewal at each change of direction. Although this era and way of life will inevitably be interrupted by the next reversal, humanity itself will persist. This is only a pessimistic state of affairs if we assume that we should value *this* way of life over that which we will enjoy (and have previously enjoyed) in a cosmos in reverse, or indeed, over the next iteration of this way of life.

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48 Perhaps the statesman's understanding of our immortality comes in part from a proper attitude towards the mythic memory that memorializes it. See Betegh (2021) for an alternative reading of the sense of community developed by the myth.

49 This has been a major motivation for three-stage readings. See Lane 1998 103–4.

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CHAPTER 2

The Demiurge and His Place in Plato's Metaphysics and Cosmology

Viktor Ilievski

Close to the beginning of his grand speech, Plato's Timaeus makes the following declaration: "To find the maker and father of this universe is a difficult task, and even once found, it's impossible to declare him to all" (*Timaeus* 28c3–5). This is certainly not meant to be taken as a hyperbole, for the inquiry into the cause of creation must indeed be an arduous and unpredictable one. Now, the Timaean maker and father[1] was made famous under another appellation, one much less straightforward and much more perplexing than the former two—*ho dēmiourgos*. It turns out that pinpointing the Demiurge's status within Plato's metaphysics is a task almost as difficult as pursuing the contemplative effort needed to attain *to poiētēn kai patera* himself. In fact, this seems to be the only indubitable thing regarding the Demiurge, as demonstrated by both the ancient divergence of opinions and the contemporary debates.

My purpose in this chapter is not to settle the differences over the ontology and the cosmogonical role of Plato's creator-god, for that could be too ambitious a task. Instead, I pursue a more modest aim, which is to offer a further contribution toward the resolution of this long-standing dispute by considering and combining certain aspects of my predecessors' views, perhaps adding a distinct flavor to the mixture. In short, my intention is to argue that the Timaean divine craftsman stands for a transcendent Intellect, which is not only a productive cause,[2] but also the highest god and the ultimate creative

1 The latter is the only "biological" metaphor applied to the Demiurge. For some Middle Platonic interpretations of Plato's intentions behind this double predication, see Voerwerk 2010, 79–94.

2 Throughout this chapter, I shall use "cause" to express the Greek notion of *aitia/aition*, instead of the alternative "explanation", "reason", etc. This is for two reasons: a) it is neither wrong nor outlandish to render *aitia/aition* with "cause", and the instances in the scholarly literature that demonstrate this are too numerous to mention; b) unless specified otherwise, it is employed here in the sense of an active force or agent that brings about or produces something, which is close to the modern idea of cause. For the interrelatedness of the notions of explanation, reason, cause, and some peculiarities regarding the last one, see Hankinson 2001, 4-5.

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principle of Plato's late metaphysics. Section three below is dedicated to this endeavor. In order to accomplish this aim, it will first be necessary to provide a concise outline of the most important views on the Demiurge circulated among the ancients, as well as those from recent times. This task is carried out in sections 2.1 and 2.2 of this chapter.

2.1 The Opinions of the Ancients

The objective of this section is primarily historical in nature. It is meant to explicate as clearly as possible the most prominent ancient stances on the Demiurge, but also to indicate what seems to be a developmental interpretative trend that culminates in recognizing him as a separate *nous*, different from both the World Soul and the Good.

The *Timaeus* became a subject of discussion very early on.[3] The enigmatic creator accentuated in the dialogue had already raised his share of controversies in the Old Academy and the Lyceum, a fact perhaps best exemplified by the awkward silence surrounding him. Thus, Aristotle chose to ignore demiurgic activity and its causal impact,[4] though he did not refrain from criticizing Plato's account of the world's temporal beginning.[5] Aristotle's depreciating remarks might have further prompted Speusippus and Xenocrates to assess the dialogue's cosmogony as a mere didactic device,[6] and to exclude the Demiurge per se from their metaphysics.[7] Besides, the non-literal interpretation, implied in the assumption that the account has a solely didactic purpose, was not

3 As attested by Proclus' remarks on Crantor, the dialogue's first commentator (Proclus, *In Ti.* I. 76.1–2). See Tarrant 2006, 168–69. For a more detailed analysis of Plutarch's and Proclus' testimonia regarding Crantor's commentary, see Dillon 2003a, 218–24.

4 This is made clear by Aristotle's assertion that Plato recognizes only two types of cause: the material and the formal (see *Metaph.* 988a7–15).

5 *Cael.* 279b17–280a10, 280a27–32. For further references to Aristotle's works and scholarly literature on the subject, see Karamanolis 2006, 29 and ns. 89–92. This criticism, of course, reflects his own reading of the *Timaeus*, which could have been either sincere or tendentious. Dillon (2003a, 25) cautiously opts for the second alternative, while O'Brien (2015, 24–25) is rather adamant that Aristotle's motivation was to weaken his opponent's position by purposefully enunciating the seemingly absurd idea of a universe created at a specific point in time.

6 Speusippus frs. 61a–b Tarán, Xenocrates frs. 153–58 Isnardi Parente.

7 Although Speusippus' god, the maker of the universe, uses the decade as the paradigm of his creation (fr. 28.9–14), Xenocrates' Monad is lauded as the primary god, *nous*, and the universal father, also known as Zeus (fr. 213.1–4). Both these entities are obvious heirs of the deconstructed Demiurge.

peculiar to Speusippus and Xenocrates alone—it seems that all other known members of the Old Academy, from Philippus of Opus[8] to Crantor, subscribed to it.[9]

Antiochus of Ascalon (c. 130–68 BC) has been lauded as the thinker whose work restored the old doctrines and thus marked the beginning of Middle Platonism.[10] The demise of skepticism in the Academy and the re-emergence of the "dogmatic" approach to philosophizing naturally brought back to the fore the need to interpret Plato's dialogues anew, with the *Timaeus* gaining a place of honor. Nonetheless, when it comes to the details of its cosmological account, Antiochus seems to have remained loyal to the tradition established in the Old Academy and neglected Plato's craftsman-god once again. The Demiurge is excluded from Antiochus' physics, or rather fused with the World Soul (which is also the *nous* and *pronoia* that directs and cares for the universe),[11] whose supremacy had already been postulated by Philippus of Opus.

The divergence from a general tendency to neglect the Demiurge was possibly heralded by the apocryphal *Peri physios kosmō kai psychas*, attributed to Timaeus Locrus (*TL*). The text represents a synopsis and partial exegesis of the Timaean cosmogony, psychogony, and human physiology. It is written in Doric dialect,[12] abounds with Peripatetic and Middle Platonic vocabulary, and also displays some possible Stoic and Neopythagorean influences. The point I want to draw attention to is that *TL*, while epitomizing *Timaeus* 27d–30c and listing

8 For Philippus, the supreme principle and the creator of all that is was the World Soul. See Dillon 2003a, 185–89, *Epin.* 983b–988e.

9 As far as the early interpretation of Timaean metaphysics is concerned, Dillon (2003b, 81)—having in mind primarily Speusippus and Xenocrates—writes: "What we are left with […] is […] on the one hand a primal deity who is an intellect, the content of which are a matrix of Forms […] and a World Soul, holding a median and mediating position in the universe, containing elements that enable it […] to transmit the Forms now in the guise of quasi-arithmetic, or rather geometric, entities […] as the building blocks of the physical world." The Receptacle is only "logically" prior to the organized world since the latter is beginningless. All efficient causal power is delegated to the World Soul. However, see Sedley (2002, 69), who claims that Polemo and those around him revived the primeval-act-of-creation interpretation.

10 See Karamanolis 2006, 44; Bonazzi 2012. However, cf. Dillon 1996, 84. For a clear explication of the thesis that Antiochus' metaphysics was more closely aligned with the Stoic position than with that of Plato or the later Platonists, see Boys-Stones 2012. A disagreement with this position is expressed in Bonazzi 2012, 312–14. Finally, for a detailed list of the possible "founders" of Middle Platonism and the relevant bibliography, see Boys-Stones 2018, 15–16.

11 See Dillon 1996, 82–83.

12 Which is, together with the author's name, one of the primary reasons why it has been included among the *Pseudopythagorica*.

the entities existent before the formation of the heavens, identifies them as Form (*idea*), matter (*hyla*), and the craftsman-god (*theos dēmiourgos*) who, being good, transformed initial disorder into order (*TL* 94c).[13] Hence, we finally have an explicit invocation of Plato's Demiurge as he appears in the *Timaeus*.[14] Although *TL*'s date and origin remain shrouded in mystery,[15] it deserves a brief mention at this juncture, because the text probably (re)gained its importance sometime toward the end of the first century AD.[16]

Incidentally, these were also the years when Plutarch of Chaeronea flourished. He, inter alia, did everything he could to turn the interpretative tide in favor of the literal reading of the *Timaeus*. In *De animae procreatione in Timaeo* (1013A–B and 1013E–F), Plutarch expresses strong disagreement with his colleagues from the Old Academy, Xenocrates and Crantor—but also mentions the later Eudorus disapprovingly—regarding both the soul's composition and the generation of the universe.[17] Plutarch's motivation for treading this scarcely

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13 These are to become the emblematic Middle Platonic principles.

14 Indeed, this statement is all but uncontroversial. *TL* does not endorse a factual primeval act of creation ("before, *according to the account*, the heavens came to be," πρὶν ὦν ὠρανὸν λόγῳ γενέσθαι, 94c1), and his principles are originally two, namely *nous*/*idea* and *anankē* or *hyla* (93a–94a); nevertheless, this could be mendable with the help of the Middle Platonic (and also—at least sporadically—earlier) assumption that the Forms are contained within god's mind (see Dillon 1993, 94–95), or perhaps soul (see Karamanolis 2006, 169).

15 To make a long story undeservingly short: Taylor (1928, 655–64) proposes the first century AD; Thesleff (1961, 62) cautiously mentions 300 BC as a possible date for the original manuscript; Baltes (1972, 105–106) argues that *TL* is later than Antiochus (125–68 BC); Dillon (1996, 131) thinks that it is later than Eudorus of Alexandria; the most revolutionary is Ryle's proposal (1965): what we actually have is an early work of Aristotle.

16 The first recorded quotation being found in Nicomachus of Gerasa (see Thesleff 1961, 60, 64).

17 A possibly peculiar point is that he gives no clues of any allies in the struggle to re-establish Plato's true teaching. This is, on the one hand, in conformity with the fact that Proclus (*In Ti.* I. 381.26–382.1) makes no reference to earlier thinkers other than "those around Plutarch and Atticus," who advanced the doctrine of creation in time – which is a commonly used but imprecise idiom. Since time arose together with the universe, there cannot be a "creation in time" proper, as also Boys-Stones 2012, 185. Perhaps the only Platonist who speaks of proto-time that precedes the orderly one is Atticus, *In Ti.* I. 276.31–277.7, 286.26–29. Plutarch has the "formless matter" of time, *Quaest. Plat.* VIII 1007A–C). On the other hand, it stands—again, possibly—in opposition to Proclus' claim that Plutarch, Atticus, and "many others among the Platonists" had a temporal understanding of the world's generation. Cherniss (1976, 176 n. a) and Sedley (2007, 107) name and identify some Greek and Roman philosophers, both earlier and later, who adhered to the doctrine of temporal creation, while Sorabji (1983, 268–75) offers a more detailed account of the debate. As a solution to Plutarch's silence and the seeming inconsistency with Proclus'

explored path was his conviction that, if he were to do otherwise, he would not remain faithful to Plato and the real purport of the *Timaeus*. In order to avoid this pitfall, he disassociates himself from his predecessors, against whom two charges are issued: (a) they are keener to promote their own ideas than to say something in conformity with Plato's own words (1013B); (b) they are embarrassed (probably on the strength of Aristotle's criticism) by what Plato actually wrote, and feel obliged to twist and deny the plain doctrinal truth of generation in time. The intricacies of Plutarch's attempts to reconstruct Plato's "true" metaphysics and cosmogony cannot be a subject of interest here. Nevertheless, one detail should not pass unnoticed: although far from evident, it is at least probable that Plutarch associated his highest god with the Timaean Demiurge,[18] besides identifying the same entity with the Good, the One, and the Paradigm,[19] which is an unsurprising offshoot of the literal reading.

Plutarch may thus be described as responsible for reinstating the Demiurge's dignity, if for no other reason than because he did not interpret him away, as well as because he disassociated the demiurgic activities from the World Soul and ascribed them to a higher entity. His later ally and follower, Atticus, went a step further. Although Dillon writes that for Atticus, "the Demiurge and the World Soul have merged into the more 'modern' and 'scientific' conception of the Logos,"[20] evidence found in the preserved fragments urges us to the conclusion that his literal reading of Plato's dialogues and his pious inclinations made him attribute a metaphysical place of honor to the Timaean Demiurge and interpret the act of creation as a craftsman-like activity.

These points are made abundantly clear. From fr. 3 (des Places), we learn that god is good, that he orders everything, and that his providence extends all the way to the realm of men; from fr. 4, that god is the most beautiful craftsman and architect, responsible for the universal order, and that his creative act is factual;[21] from fr. 9, that Atticus conceived of god as the father, guardian, and

second statement above, Cherniss proposes that Plutarch might have been the first *Platonist* to embrace that interpretation, all those anterior to him being Peripatetics.

18 See *Quaest. Plat.* 1000E; *Quaest. conv.* 720A–C.

19 Plutarch possibly identifies the creator with the Paradigm in *Quaest. Plat.* 1007D. A relatively extensive argument, to the effect that Plutarch's god is the Demiurge, but also the Paradigm (and how that is unproblematic), is given in Ferrari 2005. See also Karamanolis 2014, section 4.3; however, cf. Dillon 2002, 224-229. It has to be admitted that Plutarch's theology remains a contentious subject.

20 Dillon 1996, 252. It is also true that, only two pages later (254), Dillon writes: "Atticus made the Demiurge his supreme God, identifying him with The Good, and calling him also Intellect (*nous*)."

21 The importance of divine craftsmanship and providence for Atticus and other Middle Platonists is stressed in Chiaradonna 2015, 38–39.

Demiurge; from fr. 12, that he equated the Demiurge with the Good;[22] from frs. 13 and 23, that god, the Demiurge, also causes in a demiurgic fashion, as a carpenter; from fr. 28, that Atticus considered the Demiurge to be the first god; from fr. 34, that he placed the Demiurge above the Paradigm, and so on. Hence, Plato's Demiurge is not only alive and well in Atticus, but also elevated to the position of the supreme cause, the Good itself, who, in creating the phenomenal world, utilizes the rest of the intelligibles as models. The same is true for Alcinous, who deserves at least a brief mention here. He discusses mature Middle Platonism's three paradigmatic principles—god, Forms, matter—and equates the first one, i.e., the primary Intellect, with the Good (in *Didascalicos* 10.3). Alcinous is also probably the most familiar name in the group claimed by Petrucci to represent "the other side of Middle Platonism," its principal spokesperson being Taurus.[23]

The last philosopher counted among the Middle Platonists[24] to be mentioned in this overview is Numenius.[25] In fact, he has also been classified as belonging to the eclectic and diverse group of Neopythagoreans, because, although he accepted Plato's authority almost without reserve, Numenius believed that Plato had acquired his wisdom from Pythagoras, and that he had actually been a Pythagorean himself.[26] Be that as it may, what really counts is that Numenius based his speculations almost exclusively on Plato's dialogues—giving the *Timaeus* a place of prominence—and that his metaphysical system, as well as the Demiurge's status within it, were rather novel and proved very influential.

As reported by Calcidius in his rather long testimony on Numenius' first principles (*In Platonis Timaeum commentarius* 297.7–301.20 Waszink), the latter took matter (*dualitas*) to be ungenerated and coeval with god (*singularitas*)

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22 See also Karamanolis 2006, 162.

23 Petrucci argues extensively and persuasively that they are literalists (like Plutarch and Atticus), but nevertheless reject creation in time (like Timaeus Locrus), and, unlike the other Middle Platonists, adopt a non-craftsman-like theory of causation. For an illumination of the exegetical approach that combines literalism and sempiternalism, see Petrucci 2018, ch. 2. For the non-demiurgical cosmogony of Taurus and Alcinous see Petrucci 2018, 76–91 and 99–104, respectively.

24 A concise but meticulous overview of the defining characteristics of Middle Platonism and of the intellectual and doctrinal context within which it developed, accompanied by rich bibliography, is given in Boys-Stones 2018, 12–23.

25 He was probably senior to Atticus. I discuss the latter immediately after Plutarch simply because the two of them share many interpretative commonalities.

26 See fr. 24. 57–70 des Places. A conveniently succinct but highly informative analysis of Numenius' dating, works and philosophy is given in Karamanolis 2013.

the orderer (fr. 52.5–14).[27] Obviously, matter was at that time uninformed and in need of ordering. This task was undertaken and successfully executed by the Timaean Demiurge. However, unlike Atticus, and possibly Plutarch, Numenius declined to identify him with either the Good or the first god, fearing that contact with matter would blemish him to some degree, as well as that the contemplation of the Forms would divide his thought.[28] Hence, he postulates an entity beyond the Demiurge, the first Intellect (fr. 17), which is utterly simple (fr. 11), unmoved (fr. 15), and inactive (fr. 12). The first Intellect is the Good itself, and it is only by participation in it that the Demiurge acquires his own goodness (frs. 19, 20). As a matter of fact, Numenius is careful to insulate his second god from contamination with matter as well. His only activities are contemplation of the Forms and reflection on how to impose them on the unlimited duality. In order to perform this task, the Demiurge splits into a third god (frs. 11, 16, 21), who thinks discursively and through whom the second god creates (fr. 22). These are the three gods, or Intellects, that Numenius exalts: "the first one he calls 'Father', the second one 'Maker', while the third 'What is Made'" (fr. 21.1–3). Thus, Numenius' divinities seem to stand, respectively, for the Good (of *Republic* 508e), the Timaean Demiurge, and the World Soul of the *Timaeus*, also identified with the god which is the universe itself. In this way Numenius preserves the Demiurge but grants him a subordinate status in relation to the highest principle, the first god.

The thinker who popularized the triadic structure above and made it the standard metaphysical schema for Platonists to come was Plotinus. Although his three hypostases do diverge from Numenius' gods in nature[29] and elaboration, there were rumors circulating—even during his lifetime—that he had plagiarized the latter and presented the appropriated teachings as his own. This is reported by Porphyry (*Vita Plotini* 17), who is quick to add that Amelius responded to these allegations and wrote a treatise—unfortunately lost—that vindicates Plotinus by underlining the doctrinal differences between the two philosophers.

27 This strongly indicates a literal approach to the *Timaeus*. As Dillon (1996, 374) notes, what is lacking is a clear confirmation that he also believed in a factual act of creation. Of course, the absence of testimonia in the already scarce fragments does not prove that he did not.

28 See Karamanolis 2006, 140.

29 E.g., the Good of Plotinus, unlike Numenius', is not an Intellect, remains unconcerned even with intelligible objects, and is beyond intellection (see *Enn.* v.6).

Despite the undisputable similarities,[30] as far as the exegesis of the *Timaeus* is concerned, Plotinus clearly subscribes to the allegorical reading. For him, the process of creating the sensible world does not involve any prior planning or deliberation, or exercise of craftmanship;[31] Plato speaks of calculation and foresight that apparently antedate the universe's generation, only to indicate that it is constituted *as if* it were a product involving most excellent advance planning.[32] Once again, the figure of the creator is thoroughly "demythologized." What, then, has become of the Demiurge in Plotinus? Although it may seem at first that no unequivocal answer can be given,[33] on closer inspection it becomes abundantly clear that Plotinus assimilated Plato's Demiurge to his second hypostasis, the Intellect. Thus, most emphatically, *Ennead* II.3.18.14–16: "and over all things is *nous*, the Demiurge, who gives also to the soul, which is after him,"[34] as well as V.1.8.5–6: "For his Demiurge is the *nous.* And he says that the former creates the Soul in that mixing bowl."[35] This, with more or less variation, will remain a standard interpretation for the Platonists that follow.

Plotinus' most eminent disciple, Porphyry, was an advocate of the non-literal reading of the Timaean creation story.[36] Consequently, like Plotinus and unlike Atticus, he rejected the act of demiurgy as a temporal phenomenon, and endorsed instead the concept of an everlasting demiurgic process exercised upon the cosmos by god.[37] Now, Proclus, while discussing his predecessors' opinion on the Demiurge, makes Porphyry profess that the Demiurge is the Supramundane Soul (ψυχὴ ὑπερκόσμιος) and the Paradigm her *nous*.[38] This

30 Plotinus probably would not have been interested in denying such similarities—after all, he did not consider himself the founder of a new branch of Platonism, but a faithful follower of Plato and the tradition he had the privilege to interpret correctly (see, e.g., *Enn.* V.1.8.11–14). The trinity of principles, as Plotinus saw the issue, was in any case not Numenius' contribution, but an esoteric doctrine of Plato (which Numenius, to a degree, misunderstood), made evident in the *Second Letter* 312e.

31 See *Enn.* VI.7.1–7.

32 *Enn.* VI.7.1.30–35. See also Noble and Powers 2015, 53.

33 See *Enn.* IV.4.10.1–9. Proclus (*In Ti.* I. 305.16–20) claims that, for Plotinus, the Demiurge is double, that is, represented by both the Intellect and the World-Soul (although only a little later he denies that Plotinus ever associated the Demiurge with the latter, *In Ti.* I. 307.4–7). See also Chiaradonna 2015, 32.

34 Unless noted otherwise, the translations from Greek are mine.

35 See also II.9.6.61, where Plotinus rebukes the Gnostics for identifying the Demiurge with the World Soul and III.9.1.1–3, where he seems to use *ho dēmiourgos* as a synonym for *ho nous*.

36 For some of Porphyry's arguments against the literal reading and his explanation of the reasons behind Plato's positing of pre-cosmic disorder, see Proclus, *In Ti.* I. 394. 8–31.

37 ὁ θεὸς ἀεὶ δημιουργεῖ; see *In Ti.* I. 393. 11–13.

38 *In Ti.* I. 306.31–307.4. See also I. 431.20–23.

is certainly a curious assertion.[39] Elsewhere, i.e., in his exposition of Porphyry's criticism of Atticus (*In Platonis Timaeum commentarii* I. 391–396), Proclus claims that the former delegates the demiurgic power to god the Intellect, who is also called the primary cause and principle,[40] and for whom Plato's Demiurge of the *Timaeus* stands.[41] There are thus some little uncertainties regarding Porphyry's position on the Demiurge. Still, considering that he was an anti-literalist and a staunch adherent to Plotinus' metaphysics, it seems safe to conclude that, for him, Plato's Demiurge had been a symbol of the second hypostasis, the Intellect, which encompasses the Forms and constantly re-creates the universe by applying the seminal *logoi* on it.

The hierarchic proliferation of ontological principles, which reached its peak in the work of Proclus, had been introduced into Platonic metaphysics by Porphyry's disciple Iamblichus. As we learn from Proclus (*In Platonis Timaeum commentarii* I. 307.17–25), the simplified version of his position on the Demiurge is consistent with the principal view of Plotinus, i.e., he is identified with the intelligible cosmos. Its more detailed exposition, however, demonstrates that Iamblichus' conception does not differ much from Proclus'.[42] The latter explicates this interpretation, which he modestly claims is derived from Syrianus' teachings, in his commentary on the *Timaeus*, I.310.3–319.21. It is impossible to dwell here on the intricacies of Proclus' chain of principles, yet a failure to understand it makes grasping the identity and status of his Demiurge impossible. Therefore, in what follows, I give a rudimentary sketch of the relevant hypostasis.

On the one hand, Proclus adopts the standard Neoplatonic progression of One, Intellect, and Soul, with matter being the final and lowest stage of the One's creative output. On the other hand, following Iamblichus, he asserts

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39 "It does not look as if Proclus has made an honest attempt to give a fair account of Porphyry's view" (Opsomer 2006, 275). On the same and the next page Opsomer gives an account of both the reason behind Proclus' error and the possible purport of Porphyry's alleged statement.

40 See Proclus, *In Ti.* I. 393. 23–27, Philoponus, *De aet. mundi* 172. 5–15. However, cf. *In Ti.* I. 394. 8: οὔτε ὁ δημιουργὸς ὁ πρώτιστός ἐστι θεός, "nor is the Demiurge the very first god" and Porphyry, *Sententiae* 43.1–2: ὁ νοῦς οὐκ ἔστιν ἀρχὴ πάντων· πολλὰ γάρ ἐστιν ὁ νοῦς, πρὸ δὲ τῶν πολλῶν ἀνάγκη εἶναι τὸ ἕν, "Intellect is not the principle of everything; for the Intellect is many, while before the many there necessarily has to be the One." The supremacy of Intellect is most probably applicable only to the sensible world.

41 See, *e.g.*, *In Ti.* I. 366. 9–20; 393. 11–13; 395. 11–13, 396. 3–8, where the divine Intellect (θεῖος νοῦς) is respectively said to engage in the activity of *demiourgia* and is equated with the Demiurge.

42 See Proclus, *In Ti.* I. 308.19–309.6; Opsomer 2006, 277–78. For further similarities between Iamblichus' and Proclus' understanding of the Demiurge, see Lecerf 2012.

the tenet of the gradual diffusion of unity,[43] and recognizes the distinction between intelligible and intellective principles. This makes Plotinus' original triadic scheme much more complex. Hence, Proclus, like Plotinus and Porphyry, places the Intelligible, taken in the broadest sense of the word, below the hypostasis of the One; unlike them, however, he differentiates the triad of Being, Life, and Intellect proper within the second hypostasis.[44] These stand respectively for an intelligible (*noēton*, what is intellected), intelligible-intellective (*noēton-noeron*), and intellective principle (*noeron*, what intelligizes). Proclus locates the Demiurge within the third constituent of the triad, namely Intellect, and in this respect, he is in agreement with Plotinus. However, his love of ontological fastidiousness allows him to be more precise than his great predecessor; thus, Proclus' Demiurge represents "the limit of the intellective [entities]"[45]—which means that he is the last member of the first intellective triad comprising the Intellect.[46] Not without remarkable speculative dexterity, Proclus manages to ground the main thrusts of his argument in the text of the *Timaeus*, gathering additional support from the Orphic hymns and the *Chaldean Oracles*.

First, it is beyond dispute that the Demiurge is a *nous* (and subsequently not a soul of any kind, as Porphyry was—justly or unjustly—accused of claiming), because Plato calls him "*nous*" (*Timaeus* 39a7). The same appellation makes it clear that this he is not one of the intelligible-intellective entities—because *nous* always intelligizes, while the statement "he gazed at the everlasting [Paradigm]" (29a3) distinguishes him from the intelligible gods, since the object of intellection is the Paradigm, i.e., the Intelligible Being. Hence, the Demiurge must be one of the intellective entities. Furthermore, he cannot stand at the forefront of the intellective triad because that god is fixed in his own customary *ēthos* (42e5–6), i.e., remaining immersed in inner activity alone—while the Demiurge is outwardly creative. He also cannot be the second god of the triad, because that member is always the cause of life. Now,

43 The aims of this strategy are to insulate the first god, the One, from any immediate link with the multiplicity of the Intellect, while at the same time providing a detailed explanation of the lower hypostases' manner of procession.

44 For the subsidiary triad *to on-zōe-nous*, see *Elem. Theol.* § 101–103, and Dodds' *Commentary* (1963, 252–54).

45 *In Ti.* I. 311.2. See also I. 310.9.

46 There are two triads in the Intellect—"the parents" and "the immaculate," plus "the seventh divinity." The former's members are the pure intellect (Kronos), the intellective life (Rhea), and finally the demiurgic intellect (Zeus). In a longish theological section of his commentary (1.312.26–317.20.), Proclus explains how and why both Orpheus and Plato celebrate the Demiurge as Zeus.

the Demiurge does generate soul, but only with the assistance of Hera, the mixing bowl (41d4), while by himself he creates and imparts only *nous* (30b4). Therefore, he is primarily the cause of intellection, and thus the third member of the first intellective triad.[47]

Finally, Plato also calls the Demiurge "the best of causes" (29a6), in order to tell him apart from the lesser gods invested with demiurgic causal power.[48] All these points taken together proclaim that the Demiurge is "an intellective god transcending all other demiurges."[49] He is the monad responsible for primary creation, the provider of universal providence, the first Zeus, upon whom the hypercosmic demiurgic triad depends.[50] The latter represents the second Zeus, who is also the first god of the triad (the other two being his Homeric-Hesiodic brothers, Poseidon and Hades).[51] And yet, this is not where Proclus' story of the Demiurge ends. Below the Timaean Demiurge and the first demiurgic triad there arises another monad and a second triad,[52] but any discussion regarding these entities remains beyond the purview of this chapter.

In summary, this brief exploration of the three productive phases of Platonism leads to the following conclusions: (a) in the Old Academy, the figure of Plato's Demiurge is conspicuous by its absence; (b) although the Middle Platonists waver—identifying the Demiurge with the World Soul, with the first god, the Good, the secondary, creative Intellect—by the end of the period he is clearly profiled as an entity more fundamental than the soul; (c) if not with Plotinus, then at least with the post-Porphyrian Neoplatonists, after centuries of interpretative turmoil, the question of the Demiurge receives a definite answer, as far as one of its most crucial aspects is concerned—Plato's divine craftsman is universally understood to stand for a transcendent Intellect, both

47 See *In Ti.* I.311.2–311.25.

48 At *In Ti.* I.310.15–18, Proclus presents four types of demiurgic causation: (a) that of a demiurgic cause that produces universal beings universally (which is the demiurgic monad, i.e., the Demiurge of the *Timaeus*); (b) the one that produces partial beings universally (the first, hypercosmic demiurgic triad); (c) the demiurge of universal beings acting partially (the hypercosmic-encosmic gods); d) the cause of partial being acting partially (the encosmic, i.e., Timaeus' younger gods).

49 *In Ti.* I.311.13–14.

50 This is also what Orpheus holds, according to Proclus: see *In Ti.* I.313. 5–6.

51 The difference between the Demiurge and the first demiurgic triad, as well as their respective creative tasks, powers, etc., are explained in detail by Proclus in *Theologia Platonica* VI.6–10.

52 These are items (c) and (b) of fn. 48 *supra*.

separate from and superior to the World Soul, while at the same time subordinated to the Good.[53]

2.2 Modern Critics and the Demiurge

The present segment is intended to serve as a synopsis of some of the most prominent and most recent readings, relatively speaking, of the Demiurge, against which the conclusions of the chapter's last section will be set. These debates have their origins in the late nineteenth century, when, with the renewal of interest in Plato's *Timaeus*, the Demiurge once again became a subject of scholarly interest. The quest for discovering his identity was initiated afresh, as if it had never before been undertaken, a task now also supervenient on a plethora of philosophical ideas unknown to the ancients. Subsequently, most of the conclusions the critics have arrived at remain within the already traced lines, while nevertheless occasionally striking a rather distinctive note in comparison with those of the ancient Platonists.

Probably a prime example of the latter phenomenon is the conclusion reached by R. D. Archer-Hind, the author of the first of the three major English commentaries on the *Timaeus* (the other two being, of course, those of A. E. Taylor and F. M. Cornford). Indeed, the status that Archer-Hind assigns to the Demiurge is rather novel and not readily discernible from the text itself. He pays his dues by engaging with earlier interpretations and infers that Timaeus' account of creation must be taken as "pure poetry," beneath the veil of which "lies a depth of philosophical meaning," to be unearthed by the reader, as well as that the "Artificer of the universe" is not a personal, transcendent god, nor prior or external to the Forms.[54] What does the Demiurge stand for, then? Well, he is rightfully identifiable with the Good (*auto to agathon*),[55] provided one is able to deliver a correct interpretation of the latter. And this is where the author's own philosophical convictions come to the fore. Since Archer-Hind is a panpsychist (of Hegelian provenience), the Demiurge, for him, is the *auto to agathon*, but also the World Soul, or, more precisely, a specific phase of it, that of aloofness and purity, i.e., absolute separateness from matter. This aspect of the World Soul is, however, nothing other than the universal *nous*—pure reason or absolute thought—which is, in the world of Archer-Hind, also identical with

53 A more detailed discussion of Middle Platonic and Neoplatonic views on Plato's Demiurge is given in Opsomer 2005.

54 Archer-Hind 1888, 37–39.

55 Archer-Hind 1888, 39, 91 n. 12.

the Good itself. Plato's Demiurge thus becomes the *nous/auto to agathon*,[56] i.e., the universal spirit—though at the stage before it instigates the development of the One into the Many and their mutual unification into a conscious unity, and Platonic philosophy as a whole becomes a form of pantheism.[57]

Also current among interpretations is the notion that the Demiurge is a mythical representation of the Paradigm,[58] or, more precisely, of its dynamic and productive function.[59] Matthias Baltes argues that Timaeus' god, being a principle, has to be there in the first ontological distinction made at 27d6–28a1;[60] but if so, then he must somehow be incorporated into the *on* of 52d3. However, from 48e onward it has been clear that this *on* (i.e., of both 27d6 and 52d3) is the Paradigm; therefore, the Demiurge and the ideal model in its entirety (i.e., the intelligible world as a whole) are identical. This is confirmed by the statements that the *noēton zō(i)on* contains within itself all intelligible *zō(i)a*, (30c5-31a4) and that the Demiurge is the most excellent of all eternal and intelligible beings (37a1).[61] The result of this line of reasoning is a concept basically non-different from Plotinus' Demiurge, who stands identified with the philosopher's second hypostasis.

Taylor's view on the Demiurge, though informed by some Christian concepts and Whitehead's ontology, is much closer to the (pre-Plutarchian) traditional interpretations. His analysis is clear-cut, and its main features seem to be as follows: (a) Timaeus' creation story is to be taken allegorically, i.e., there has never been an actual state of chaos and disorder that needed to be organized; (b) the cause of the universal order is the Demiurge, who is the only God in Plato's system, separate from the Paradigm, omniscient and omnibenevolent;[62] (c) on the strength of the evidence in the *Sophist* (249a4–8),[63] Taylor urges that the ordering *nous* Socrates brings up in the *Phaedo*—as well as, for that matter, its much improved counterpart in the *Timaeus*—cannot either

56 Other recent critics who identify the Demiurge with *auto to agathon*—though in a different way and for different reasons—include Stewart, who held that the Good of the scientific Plato is the religious Plato's Demiurge (1905, 101–2), Zeller (1922, 710–18), and Wood (1968), who took the Demiurge to be a mythical personification of the Good.

57 Archer-Hind 1888, 39–40.

58 See Baltes 1996.

59 See Ferrari 2007, 156–63, esp. 161.

60 This is, of course, the distinction between "that which always is, without being involved in becoming, and that which perpetually becomes, but never truly is" (τὸ ὂν ἀεί, γένεσιν δὲ οὐκ ἔχον, καὶ τί τὸ γιγνόμενον μὲν ἀεί, ὂν δὲ οὐδέποτε).

61 Baltes 1996, 82.

62 See Taylor 1928, 76, 82.

63 This is corroborated in *Phlb*. 30c9–10, *Ti.* 30b. However, Taylor does not mention those two *loci* at this juncture.

exist or exercise agency apart from soul;[64] d) this, in conjunction with *Laws* 896d5–8, where it is stated that soul is the cause of everything, including the good and the bad,[65] makes him conclude that Plato's God, the Demiurge, is a soul, and, moreover, *aristē psychē,* the best, absolutely good soul, identifiable with the Cosmic Soul of the *Laws*.[66]

R. G. Bury, who authored the Loeb translation of the *Timaeus*, initially seems to be in favor of the Demiurge as "the embodiment of 'the Good' regarded as efficient Cause",[67] perhaps on account of his Christian background. However, for reasons of inconsistency of the thesis and fidelity to the letter of Plato's dialogues, he is bound to separate the Demiurge from the Paradigm and the Forms in general, as well as to recognize him as *nous*, best identifiable with the cause of the *Philebus*. Finally, having in mind the same concerns as Taylor, i.e., the mythical character of the account and the alleged inseparability of intellect from soul, Bury comes to a different conclusion, namely that "the Demiurge is no separate Power or independent divinity, but merely a part or faculty of the World-Soul".[68]

Perhaps surprisingly, Cornford declines to distinctly pinpoint the Demiurge's identity and position, claiming that "[t]his is precisely the question that Plato refused to answer."[69] Nevertheless, he does make several important claims. First, the creation account related in the *Timaeus* is not to be taken literally.[70] Second—and in response to Taylor's insistence that Timaeus' creator-god is Plato's supreme and only God—Cornford asserts that the Demiurge is not a religious figure, not an object of worship, nor an omnipotent creator.[71] Third, the Demiurge, who obviously represents the cosmic Intellect, or *nous*, is distinct and separate from the Paradigm, while not separate from the world he is depicted as creating.[72] Finally, cashing in on Plato's seemingly unambiguous statement that Intellect can be found only in soul, as well as on Timaeus' depiction of the universe as a god—a whole composed of body, soul, and *nous*—Cornford proposes that Plato might have envisioned the Demiurge as a

64 Taylor 1928, 77.
65 Taylor 1928, 72,78.
66 Taylor 1928, 71, 72, 75, 76, 77, 82.
67 Bury 1929, 7.
68 Bury 1929, 10.
69 Cornford (1937) 1997, 38.
70 "[B]oth the Demiurge and chaos are symbols: neither is to be taken quite literally, yet both stand for real elements in the world as it exists" (Cornford [1937] 1997, 37). It turns out that they represent the innate sources of order and disorder, respectively.
71 See Cornford (1937) 1997, 35, 36, 38.
72 Cornford (1937) 1997, 38, 39.

representation of divine Intellect, which is inseparable, and thus non-distinct, from the World Soul and the cosmos.[73]

Harold Cherniss is yet another advocate of the allegorical reading of the *Timaeus* and understands its account of creation to be but a "mythical form of exposition."[74] Consequently, the Demiurge is not meant to be taken literally either.[75] Still, he must have a place in Plato's system. One thing is rather obvious in this regard, i.e., that the Demiurge represents *nous*.[76] However, Cherniss also affirms that *nous* cannot exist apart from soul,[77] so the god of the *Timaeus* must be a divine soul endowed with *nous*, i.e., the World Soul. Now, here comes the twist: that *nous*—which is identical with the One of the *Philebus*, also denominated as "cause"—is not an entity in its own right, but the World Soul's faculty for contemplating the Forms and transferring their structure onto the creation.[78] Thus, Plato's Demiurge "[i]s not 'god' but a logical abstraction, 'intelligent causation' in general."[79]

Another interpretation from the first half of the twentieth century must be mentioned, because, together with the previous three, they comprise a set from whose boundaries most of the later construals do not diverge. It is authored by Hackforth, who, like the other modern scholars mentioned so far, believes that both the creation story and the Demiurge are mythical images, for which, however, factual equivalents should be sought, and which are not to be explained away. Unsurprisingly, Hackforth identifies the Demiurge with *nous*, which is, however, this time separate from, and more fundamental than, the World Soul.[80] The latter viewpoint makes him disagree with Taylor, Cornford, and Cherniss on another crucial issue; despite the allegedly decisive textual evidence, he holds that this *nous can* exist apart from soul, while the relevant passages are concerned merely with the universe and the entities within it. They all only have *nous*, but are not themselves a *nous*.[81] Unlike those, the

73 Cornford (1937) 1997, 39. And, more emphatically: "It becomes more than ever difficult to resist the inference that the Demiurge is to be identified with the Reason in the World Soul" (Cornford [1937] 1997, 197). It is obvious that Cornford was led to a view very similar to that of Bury.

74 Cherniss 1944, 431.

75 See Cherniss 1944, 425.

76 Cherniss 1944, 605.

77 Cherniss 1944, 425, 606–7.

78 For a rather complementary outlook, see Archer-Hind 1888, 93 n. 7.

79 Cherniss 1944, 607.

80 Hackforth 1936, 4.

81 Hackforth 1936, 7.

Demiurge is an independent *nous*, the transcendent-immanent God, and the first principle of late Plato.

It has already been mentioned that most of the subsequent twentieth- and twenty-first-century interpretations are variants of the last four readings discussed above. Thus, Carone, not unlike Taylor, holds Plato's creator-god to be a mythical representation of the World Soul,[82] but also, in affinity with Cornford, that the World Soul stands for "[t]he mind or principle of organization of the universe, which does not exist independently of it but rather necessitates a body, as […] every intellect and every soul does in Plato's late work."[83] Finally, almost rephrasing Cherniss, she emphasizes the Demiurge's abstractness and factual purpose of embodying "intelligent causation aiming at an end."[84]

Yet, the advocates of the separate *nous* thesis seem to have become more prominent in recent decades. This group, although obviously sharing the most important common postulate, is not characterized by a firm unanimity of opinion. For example, one of its distinguished representatives, W. K. C. Guthrie, sees the Demiurge as the hypercosmic God of theistic Plato, clearly distinguishable from the World Soul and the encosmic demigods. He is a divine Intellect, separate from the Forms and the productive cause of the creation, identifiable with the great cause of *Philebus* 23d.[85]

In an effort allied to those of Hackforth and Guthrie, Mohr takes issue with the claim that *nous* cannot exist unless incorporated within a soul. He argues that the related textual evidence pertains to instances when *nous* is already in something, i.e., to an intellect such as ours, which needs to be both ensouled and embodied. This does not cover the case of the Demiurge, who is not contained anywhere, but is instead a transcendent God, pure Intellect, and artificer of souls and ensouled creatures.[86] Mohr thus objects to the tendency to explain the Demiurge away, and takes him as a real figure, i.e., a "non-reducible

82 Other critics who understand the Demiurge as identical to the World Soul include Vlastos (1967), Tarán (1971), and Fronterotta (2012, 16–18).

83 Carone 2005, 28.

84 Carone 2005, 31. All the aforementioned points, as well as the final conclusion that the Demiurge is a symbol of the World Soul and its intellective functions, are elaborated in Carone 2005, 42–52.

85 See Guthrie 1978, 215, 253–62.

86 See Mohr 2005. His intervention is especially important because it addresses Cherniss' assertion that, although the relevant *Timaeus* and *Philebus* passages could be interpreted away as definite proofs that the *nous* is dependent on soul for its existence, the *Sophist* 248e–249d is unambiguous in this regard. Mohr argues, in my opinion successfully, that the *Sophist* as well is reconcilable with the reading that recognizes the existence of an unensouled *nous* in Plato.

component of the Platonic metaphysics."[87] The Demiurge's interventions are primarily aimed at an epistemological end, which is to improve the world's intelligibility and thus facilitate the formation of true opinions.[88]

The most comprehensive bid to establish a Platonic ontology of the Demiurge is Stephen Menn's, who dedicated his *Plato on the God as Nous* primarily to the exploration of this topic. Menn by and large joins the route already trodden by Hackforth, Guthrie, and Mohr, and argues extensively in favor of the Demiurge's separateness from the World Soul[89] and his identity with the *nous* of the *Philebus* and *Laws* XII.[90] He seems to prefer a non-literal reading of the Timaean creation story,[91] while his most important and distinctive thesis is that the demiurgic *nous* is not "Mind" but the virtue of rationality.[92] Of course, Plato allows for virtues to exist in themselves, but they must be Forms. Menn naturally embraces this conclusion, and eventually asserts that the *nous* of the *Timaeus* and the other dialogues is a Form, though of a special kind: it is one capable of exerting not only formal, but also efficient, causal power, the constantly active cause of universal order.[93]

Similar to Menn's approach, to a certain degree, is that of Johansen, inasmuch as he interprets the Demiurge as the continually active, abstract principle that restores order whenever and wherever necessary, and also helps himself to some Aristotelian ideas while constructing his exposition. Plato's Demiurge now turns out to be a manifestation of craftsmanship, i.e., a personification of the productive and ordering *technē*, which is also the creation's productive cause.[94] This is the most novel feature of Johansen's take, while the rest of it is in conformity with Hackforth and others: the divine *technē* in question is essentially a *nous* acting from outside the universe, separate from both the World Soul and the Forms—the non-literal reading of the *Timaeus* is thus the safest.[95] In essence, this interpretation is also affiliated to the conclusions of Luc Brisson's impressive elucidation of the Demiurge and his role in the *Timaeus* and beyond. For Brisson, Plato's father and maker is a *nous* distinct from the Forms, distinct from the *nous* of the World Soul and the World Soul itself, and a productive agent endowed with thought, will, emotion. He is a

87 Mohr 1985, 131.
88 See Mohr 1985.
89 Menn 1995, 13–24.
90 Menn 1995, 10, 18.
91 Menn 1995, 51.
92 Menn 1995, 15–16, passim.
93 Menn 1995, 44–47, 57–59.
94 Johansen 2004, 84.
95 See Johansen 2004, 69–91.

god—however, not a personal one, but instead a representative of the universal order, a *function* whose actions are diversified according to the nature of the creations that are to be produced.[96]

Sarah Broadie shares many of the tenets accepted by the group that prefers the separate *nous* interpretation.[97] Thus, the Demiurge is a creative and ordering *nous* separate from the cosmos and different from the World Soul.[98] Besides the novel and complex arguments presented in support of these conclusions, her main contribution to the debate seems to be the (welcome) shift from an allegorical to a literal reading of Timaeus' creation story. The upshot of Broadie's investigations in this matter is that Plato was serious about the proto-historical beginning of the cosmos, even if his temporal account cannot be characterized as fully coherent.[99]

It is my hope that the selection given in the main body of this section suffices to illustrate what I take to be a general trend: modern and contemporary critics have explored a varied range of interpretative possibilities, while the second half of the twentieth century and the last two decades have witnessed an increased interest in the view that most naturally emerges from the textual evidence: the Demiurge is a *nous*. However, opinions significantly differ on whether it is transcendent or immanent, as well as on its more detailed specifications.

2.3 What Plato Really Thought: A Modest Proposal

The debate centered around the Demiurge's status has indeed been substantial, although there are not many alternatives one can opt for in that regard—the problem being, essentially, of an exegetical nature. This fact makes the bid to join the discussion that much more difficult, but certainly not redundant. One way to embark on such a task is to step all the way back to square one, with a view to revising the basics.

The noun *dēmiourgos* and its cognates, in their philosophically relevant sense, appear in the *Republic*, as well as in possibly all of Plato's late dialogues, excluding the *Critias*. These are the *Sophist*, the *Statesman*, the *Philebus*, and

96 See Brisson 1998, 32–36, 53, 70.

97 Yet another representative of this view is Karfik (2007), who holds the Demiurge to be a thinking and acting divine Intellect.

98 Broadie 2012, 7, 13, 17–24. She is not forthright about the separateness of the Demiurge from the Paradigm but affirms that they are at least different in function (2012, 27).

99 Broadie 2012, 22–24, 243–77.

the *Timaeus,*[100] while Mohr claims, based on a single analogy in *Laws 902e4–5*, that the divinity of *Laws* x is also a demiurge.[101] The word is prosaic enough: it primarily means "skilled manual worker who produces goods for others."[102] A critic glosses it as "a craftsman, an artisan, someone who makes (*poiein*) things by pursuing a *technē*."[103] Additionally, in some city-states, the term also served as a title of a magistrate.[104] It is attested as such in Thucydides, which implies that Plato was most probably aware of that connotation. Both these senses are meaningfully applicable to the Demiurge, although one may wonder what prompted Plato to associate his creator-god with a person of such lowly social status as the Athenian *dēmiourgos*.[105] Perhaps the reason is the most obvious one. Namely, the Timaean maker of the cosmos is functionally non-different from any ordinary craftsman: as the latter produces an amphora by turning to a model and working on the already available clay, in much the same way the former gazes at the divine Paradigm and fashions this world using pre-existent material. In other words, the crux of the matter might have been to emphasize the productive capacity of the Demiurge, his role as a causal agent.

The seed of this idea is probably sown in the *Cratylus* 389a–390a, where the *onomatourgos* or the *nomothēs*[106] is called the rarest of craftsmen[107] and compared to a carpenter who fashions a loom shuttle, inasmuch as both artisans generate their product by gazing at and reproducing its *eidos*.[108] At *Republic* 529d7–530b4 this analogy acquires theological and cosmological import. The passage is imbedded within a broader discussion of the spiritual ineffectuality of the practice of mundane astronomy.[109] Its main purport is to suggest

100 The ordering here is somewhat random, since it is of little importance for the issue.

101 See Mohr 1978, 573 and cf. Brisson 1998, 30. This is, however, a contestable suggestion.

102 Liddell et al. 1996, 386.

103 Sallis 1999, 50.

104 Brisson (1998, 50–54; 84–97) elaborates extensively on this meaning.

105 See Gregory 2008, xxxii. However, Brisson (1998, 84–101) offers a very erudite and detailed argument that is meant to justify Plato's choice of the term as the best possible description of his creative and ruling cosmological principle.

106 The name-maker or lawgiver, i.e., the inventor of words.

107 τῶν δημιουργῶν σπανιώτατος, *Cra.* 389a2.

108 Cf. *Resp.* 596b–d. Also *Gorg.* 503d–504b, where the *dēmiourgoi* are said to be responsible for ordering and organizing their material.

109 *Resp.* 529a-530c. This seems to stand in opposition to *Timaeus* 46e7-47c4, where the capacity to observe celestial phenomena is said to be the greatest benefit effectuated by the organ of sight, and consequently the very reason for its bestowal upon mortals by god. Because, in this way men acquire first mathematics, then philosophy, and finally become eligible to harmonize the revolutions of their souls with those of the World Soul. However, it could very well be that the contradiction resolves itself once one recognizes the different contexts of the *Timaeus* and *Republic* passages; in the first one Plato's focus

that just as even the most masterfully drawn diagrams cannot express the true mathematical ratios that govern geometric figures, so the visible heavens, as intricately construed as they may be, fall short of conveying the ideal number and relations of motion, as well as the realm of Being. Therefore, one should abandon observational, and embrace pure mathematical astronomy. What is of special interest for us here is the example of Daedalus, an adept craftsman,[110] who draws complex diagrams which serve as blueprints for his mobile statues, and the parallel that is drawn between him and god, the craftsman of the heavens,[111] who shaped the celestial vault as excellently as possible, given the material.[112] Both the diagrams and the heavens can be used only as visible models that facilitate rational inquiry into the eternal realities and connections they represent. The relation is in this case inverted as far as the Timaean model-copy concept is concerned, i.e., the product now becomes, in a sense, a paradigm—but that is immaterial; the key point is the comparison of the world with a work of art or technical ingenuity, and of its creator with an artisan who manufactures it. There are no serious obstacles now left for applying the term *dēmiourgos* to both a human craftsman and the creator-god.

The second sense of the term, i.e., the one related to the office of a magistrate, also fits well with the cosmological function of the Demiurge. For he not only creates the world, but also governs it through his appointed representatives, and even personally introduces the "laws of destiny" to the individual souls (*Timaeus* 41e–42e).

The most important Platonic text on the Demiurge is, of course, the *Timaeus*, where this enigmatic figure plays a central role in the psychogonic and cosmogonic events. It is introduced in a remarkable way, as if not only to borrow the appellation from the ordinary craftsman and apply it to the god, but also to make the resemblance between the former and the latter obvious. At 24a, while the anonymous priest is presenting the Egyptian (and, by analogy, the ancient Athenian) social division to Solon, the caste of craftsmen (*dēmiourgoi*) and its various subunits are brought up. Next, from 28a on, the reader learns that *any* craftsman (*dēmiourgos*) who aims at producing a beautiful object directs his gaze at the changeless paradigm.[113] Finally, at 28c, the world's creator is called

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is on the starting point of the spiritual evolution, in the second he discusses the gateways of dialectic as the final stage of one's ascent to the Good.

110 Δαιδάλου [...] δημιουργοῦ, *Resp.* 529e1.

111 τῷ τοῦ οὐρανοῦ δημιουργῷ, *Resp.* 530a6.

112 Which is another reversed echo of the *Timaeus*.

113 This is possibly a tacit allusion to the relevant *Cratylus* passage, as well as an intimation of the cosmic craftsman's activity.

into the picture, and described as its maker (*poiētēs*), father (*patēr*), and artificer (*ho tektainomenos*). However, when presented in his full glory, as the best of causes (*aristos tōn aitiōn*) and the benevolent (*agathos*) god by whom the cosmos has been crafted (*dedēmiourgētai*), he becomes known as the Demiurge (29a2–29b1). This is the title that stuck and has remained in vogue to date, exactly because of the vividness and simplicity of the simile with the all too well-known common craftsman, the producer of things. Plato refers to the god as a Demiurge again at 41a7, as the maker and father of things indestructible; at 42e8, where he is the maker of the younger gods; at 68e2, where he, unlike Necessity, is the maker of what is the most beautiful and best; at 69c, where the divine elements of the world are said to be fashioned by him. As though to strengthen the productive force of the metaphor, i.e., to enunciate its essentially efficient[114] character, other *poiētai,* both sentient and inanimate, are also addressed by Plato as *dēmiourgoi*, or their activity is typified as *dēmiourgein*. These are the younger gods (41c, 46e,[115] 69c, 75b), the planet earth (40c), the element of fire (59a), and Necessity (76d).

Yet, as has been mentioned already, the *Timaeus* is far from the only relevant dialogue as far as the Demiurge is concerned. In the *Sophist*, during the final, successful bid to define the sophist through the method of division (*Soph.* 264b-268d), the Eleatic Stranger proposes a partition of the productive art (ἡ τέχνη ποιητική) into two sections: divine and human (τὸ μὲν θεῖον, τὸ δ' ἀνθρώπινον, 265b6).[116] The practitioner of the divine productive art is, of course, god, who gives rise to all living being and lifeless substances by having recourse to reckoning and godly knowledge (μετὰ λόγου τε καὶ ἐπιστήμης θείας, 265c8). The divinity of *Sophist* 265a–265d is a craftsman-god (θεοῦ δημιουργοῦντος, 265c4) endowed with productive power (ποιητικήν δύναμιν) which is the *aitia* behind the coming to be of things that previously were not (265b8-10).

The *Statesman* is probably even more specific. In the dialogue's great myth (268d-274e), the Eleatic Stranger promises to weave together three traditional

114 The employment of this term, of course, does not imply that Plato worked with or recognized Aristotle's taxonomy, but only that, with the benefit of hindsight, we could discern in his ruminations on causality something alike to the Aristotelian efficient cause, or, more broadly, to the common concept of efficiency as productive action of a conscious agent. There have been precedents regarding the application of the phrase "efficient cause" to Plato's thought; see, e.g., Menn 1995, 46.

115 Here, both the younger gods and the Demiurge are implied, because they are all "craftsmen of things beautiful and good" (46e4).

116 The former is responsible for natural entities, which are thus made by divine art (ποιεῖσθαι θείᾳ τέχνῃ, 265e3), while the latter utilizes these as materials in the production of various artefacts.

tales – those of the quarrel between Atreus and Thyestes, of the earth-born people and of the Hesiodic golden age[117] – by pointing out the single unifying condition due to which they all arise (269b-c). This turns out to be the periodic reversal of the universe's rotation: sometimes it is under god's direct care and rotates from west to east, while at other times god retires and the universe revolves in the opposite direction.[118] The principal reason behind this alteration is the world's corporeal nature, which prevents it from remaining permanently self-same and unchanged. Be that as it may, a point of special importance here is that the divinity who oversees these events, the creator and the governor of the universe, is not only identified as a craftsman (*dēmiourgos* 270a5), but also lauded as its "Demiurge and father" (*tou dēmiourgou kai patros,* 273b1–2).[119]

Lastly, there is the discussion of four kinds (*eidē*) of beings (*ta onta*) at *Philebus* 23c-27c. As it is well known, these are the unlimited (*to apeiron*), the limit (*to peras*), their mixture (*to symmisgomenon*), and the cause (*aitia*, 23d7, 26e1-27c1) that blends the first two. The last kind, or principle, is said to be Intellect (*nous,* 28c1-31a3) and a productive cause (26e6-8).[120] As if to specify the type of productive activity that this *nous* performs, Plato also describes it as the craftsman who makes (*to dēmiourgoun*) all things that come to be.[121]

None of this information, of course, fully answers the questions regarding the Demiurge's nature, status, and importance, but it nevertheless contains unmistakable hints that point the reader in the right direction. I believe that the following probable account can be of use in discerning this direction and

117 A brief elucidation of these three motifs and references to other Plato's dialogues where they are mentioned or alluded to is given in Vidal-Naquet 1978, 136-137.

118 The number and the nature of the cosmic rotations has become a debated issue. For references to several key participants in the debate and some novel solutions, see chapter 1 in this volume.

119 It is of little interest for our purpose to enquire whether this god is Zeus, Kronos, or yet another deity (some thoughts on this issue can be found in, e.g., Gartner and Yau 2017, 454-55); what matters is the fact that he is being characterized – in language reminiscent of the *Timaeus* – as a demiurgic entity.

120 The equivalence between *nous* and *aitia* is confirmed at *Phil.* 30a10-30e3.

121 The text is here ambiguous, because τὸ δὲ δὴ πάντα ταῦτα δημιουργοῦν could refer both to πάντα τὰ τρία … γένη, i.e., to the three kinds of unlimited, limit, and mixture, as well as to τὰ μὲν γιγνόμενα (27a11-12). However, considering that the first two kinds are themselves independent principles, that the mixture is repeatedly referred to as something that comes into being, and that at 23d7 and 27b9 the fourth kind is explicitly said to be its cause, it is safe to conclude that Plato does not want to say that the cause of the *Philebus* produces all three kinds, but only the mixture, i.e., the becoming.

ultimately in lifting the veil of mystery that surrounds Plato's Demiurge, who in all apposite late dialogues appears as an intelligent productive agent.

The first upshot of the relevant passages in the *Timaeus* and the related dialogues is that the creator-god and his exploits are not to be taken lightly or dismissed as mere allegory; on the contrary, they play an indispensable role in Plato's later metaphysics and cosmology. This can be made obvious by applying a simple abstraction experiment.

Let us imagine for a moment that we know nothing of Plato's ontology and causal theory as they have been learned from the *Phaedo* and the *Republic*. What are we left with in the late dialogues? In a nutshell, the Forms are still there, but their prominence is rather limited; the "classical" doctrine of the Forms is subjected to serious revision (the *Sophist*),[122] and their causal role is minimized and confined to the subordinate, paradigmatic one (the *Timaeus*). What we do have instead is an increased insistence on the causal and overall importance of soul and *nous*. One of the key reasons for such divergence is the difficulty hinted at in *Phaedo* 99c–d, where Socrates proclaims himself (temporarily) unable to investigate and grasp—if I may paraphrase—"the godly force of the cause that works for the best," and therefore settles for his second voyage, which is the (imperfect) formal explanation of the perceptible phenomena.[123] This implies the whole cluster of problems concerning Plato's two-world theory, but primarily the issue of the link—or lack thereof—between the Forms and the particulars, including the standard answer given to it, i.e., the notion of participation.[124] This is obviously too large and complex an issue to be discussed here; however, it should be noted that much of the Timaean cosmogony may have been conceived as an attempt to clarify "how it is that *nous* sets in order and causes everything,"[125] i.e., to provide a tenable teleological/efficient causal explanation of the relation between the worlds of Intellect and sense.[126] That is also the reason why, in Plato's late period, in general the causality of Forms remains a dormant concern, while precedence is given to

122 See e.g., Kahn 2007.

123 See *Phd.* 99c1–3. For a radically different interpretation of the 99c passage, according to which Socrates in the *Phaedo* does not abandon the quest for teleological cause, see Vázquez 2020.

124 *metalēpsis*, *methexis*. It is evidently unsatisfactory, and never actually spelled out, except in purposefully obscured language; see e.g., *Phd.* 100c–d, *Symp.* 210e–211b. It was subjected to honest criticism in *Prm.* 130e–131e.

125 ὡς ἄρα νοῦς ἐστιν ὁ διακοσμῶν τε καὶ πάντων αἴτιος, *Phd.* 97c1–2.

126 See Lennox 1985, who argues that the divine craftsman makes the cosmos good by implementing ideal mathematical structures. See also chapters 3 and 4 in this volume.

the causal output of active and intelligent agents, most importantly to *nous* or god.

The epitome of such divine causal agency in late Plato is the Demiurge of the *Timaeus* and the other dialogues of the group. He organizes the initial chaos by somehow projecting upon it the transcendent realities (53b4–5) and installs the Cosmic Soul as an everlasting mediator between the eternal and the temporal realm. Considering the extraordinary role he has been granted, it is reasonable to assume that his metaphysical status will not be any less vital, either. As mentioned at the beginning of the section, the options in this respect—those for which the text allows—are but few: when not completely rejected as an ontic and explanatory entity, the Demiurge was identified in the ancient world with the World Soul, the Good, the Paradigm, the Intellect, and with god, and in recent times with the Good or another Form or collection of Forms, the World Soul, as well with an immanent or transcendent *nous*, sometimes construed as an impersonal productive and ordering principle, sometimes as God.

It seems that none of these opinions has been conclusively dismissed in twenty-first-century scholarship, although the separate *nous* thesis (in its few variants) has perhaps gained a firmer foothold. Now, before briefly reviewing them, it is important to spell out the interpretational perspective that underlies my approach. I endorse a strong literal reading of the creation story,[127] which is, among other things, almost necessitated by Myles Burnyeat's widely accepted interpretation of the *eikōs mythos* locution as a (probable but) reasonable account.[128] The crucial implication of such an approach is that the

127 That is, of its central cosmogonical and cosmological features; it is not that I am committed to the obviously fantastic images, like the mixing bowl where the soul-stuff is kneaded (41d). It is impossible here to defend this position, which also represents the most natural approach. For a synopsis of the debate among adherents of the literal and metaphorical reading, see Zeyl 2000, xx–xv. For a more comprehensive list of the spokespersons for both views, see Carone 2005, 204 n. 19. For an alternative take, which aims at reconciling the opposed readings (the so-called perpetual, or on-going creation view), see Johansen 2004, 87–91 (esp. 90–91), and Carone 2005, 31–35. A conveniently brief selection of arguments in favor of the literal reading is given in Sedley 2007, 99–105.

128 Burnyeat 2005. In this article, he does not promote the literal reading explicitly. However, if Timaeus' account is "well reasoned like any of the PreSocratic cosmogonies" (145), if its purpose is to provide a series of practical reasons why the cosmos is as it is (158), if "the more appropriate or reasonable the account of some phenomenon, the greater the possibility of its being true" (163), etc., then it is perhaps wise to surmise that Plato did *not* conceive of his *eikos mythos* as a didactic fairy tale, but as a fair attempt at laying out a proper cosmogony, at least as sound as those of his predecessors, and perhaps more so. On the contrary, Fronterotta (2012, 16) holds that the *eikos logos* phrase implies a metaphorical reading.

Platonic cosmos has a beginning[129] and that it was created by a rational agent who, through the medium of the sempiternal World Soul, superimposed shape, proportion, and regularity on the factually existing disorderly material plenum.[130] This efficient causal factor is, evidently, the Demiurge.

It is almost equally evident that Plato did not intend the Timaean creator to be a representation of his most celebrated class of intelligibles, i.e., the Forms. First, he is neither a part of, nor is he to be identified with, the complex of Forms that is to *zō(i)on auto*. Timaeus' own words exclude this possibility—the Demiurge contemplates,[131] or gazes on, the Paradigm (*Timaeus* 28a–29a), which implies that he is somehow external to it.[132] Someone may object that Plato here presents a case of self-contemplation; however, this proposal is not warranted by textual evidence and also leaves unexplained the peculiar ontological and causal status of the Timaean *nous*. I believe that the tendency to identify the latter with the Paradigm is partly prompted by the attempt to preserve exegetical economy, i.e., to elucidate the cosmogony of the *Timaeus* without admitting an additional entity into Plato's metaphysics. However, its proponents seem to end up doing exactly that, by assuming that the totality of Forms is a structure more perfect than its parts, the former being endowed with powers of self-contemplation and efficient causation of which the parts in themselves are devoid.[133] This may be an attractive suggestion, but it reflects Neoplatonic rather than Platonic metaphysics, where there are no indications of such a concept. The same cannot be said of the possible existence of a separate *nous*. Thus, it appears that the latter thesis is in fact more economical than the former.

Furthermore, (a) nowhere in the Platonic corpus are the Forms called *theos* or *nous* (as the Demiurge is), nor is any god proclaimed to be an

129 However, not *in time*. Time is related to the motions of the World Soul and is coeval with the universe, while the state of being of the Demiurge and the Forms is eternity. The temporal beginning question thus becomes inadmissible. This view can potentially help in resolving the related worries of the Demiurge's pre-creational inactivity and withdrawal of benevolence. See chapter 4 in this volume.

130 In this case, the reverse strategy is applicable as well; that is to say, if the following understanding of the Demiurge has some claim to plausibility, it could be used as a further argument in support of the literal reading.

131 The importance of the states of cognition and knowledge for the notion of the Demiurge is emphasized in Karfík 2007.

132 The *nous-ideai* divide is once again emphasized at 39e7–8. The question whether the Forms are themselves external to the divine Intellect, or rather constitute its content—an outlook that gained prominence at least with Philo Judaeus—is of little importance for this discussion.

133 See Ferrari 2007, 161–62.

eidos;[134] and, (b) even if efficient causal power cannot be with absolute certainty denied of the Forms,[135] they emblematically cause by being participated in, while the epitomes of efficient causality in Plato could only be soul and *nous*. In the *Timaeus* in particular, the Forms are both clearly paradigmatic causes and distinguished from the efficient one, which is *theos dēmiourgos*.[136]

Second, the Demiurge cannot be equated with the highest of Forms, *to autoagathon*. As already noted by Numenius (fr. 20) and Proclus (*In Platonis Timaeum commentarii* I. 306.7–9), Plato claims that he is *agathos* (*Timaeus* 29a3, 29e1), not *tagathon*. And again, nowhere is the Good said to be a god and *nous*, or to exercise any creative or ruling power over the world of sense—as the Demiurge is and does. This assertion is susceptible to a very natural objection: we have the case of the Good of *Republic* 508a–509b, which is qualified as the cause of the other Forms' being and intelligibility, and which is likened to the sun of this world and its cognitive and generative role. However, this should not be used to collapse the Demiurge into the Good. The latter there presides over the intelligible world, not the physical one, while the sun *analogy* is nothing more than that—an illustrative analogy meant to enhance understanding of the relations within the realm of Forms. The reader is not supposed to conceive of our sun as some kind of image or representation of the Good that creates and informs the Becoming.

Third, it is hardly possible that Plato's creator-god stands for a unique Form of *nous*, as Menn argues extensively. While *nous* can refer to the virtue of rationality[137]—which is a crucial step in Menn's argument, for every Platonist would further accept the existence of the hypostasized virtue as a separate reality—one may doubt that this is the sense in which it is applied to the Timaean cosmogony. Not only is it plain that Plato *does* use *nous* both in the sense of the faculty for *noesis*,[138] and, implicitly, to designate the substance that is its seat,[139] but also the *nous* of the *Timaeus*—and of late Plato in general—is easily relatable to these two meanings. It clearly contemplates

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134 The common objection that *Ti.* 37a refers to the Demiurge as a Form, naming him "the best of the intelligible beings," has been answered already by Cherniss (1944, 605): "the reference here to the demiurge [...] means nothing more than does 'intelligible' as used of soul in *Laws* 898D–E." That is, Plato recognizes other intelligible entities besides Forms, and he is free to apply the term *noētos* to any one of them. See also Plutarch's *Quaest. Plat.* 1002B: "For, god is among the intelligible beings."

135 As Aristotle does, but Menn (1995, 55) and possibly Fronterotta (2007, 53) decline to do.

136 Cf. *De an. proc.* 1023C.

137 See Menn 1995, 14–18.

138 See e.g., *Resp.* 511d.

139 This is the soul's rational, or divine, part.

the Forms and, perhaps less clearly, represents a separate principle and entity. Again, even if we concede that Menn's peculiar Form of *nous* is efficiently efficacious, Plato's texts go further than simply postulating an impersonal source of change,[140] and instead introduce a rational agent who makes deliberative, informed, good choices, and who is also a cognitive subject, even one endowed with emotional states. In the *Timaeus*, the Demiurge thinks (*hēgeomai*, 30a5) and reckons (*logizomai*, 30b1), but also desires (*boulomai*, 30a2), feels delight and gladness (*agamai* and *euphrainō*, 37c); in the *Sophist* (265c) he ratiocinates, having recourse to divine knowledge. Furthermore, at *Statesman* 269e, there is a statement to the effect that the leader of all things – whom I take to be the demiurgic god of the dialogue[141] – constantly revolves around himself (*auto de heauto strephein aei*, 269e5), which is most probably a metaphor for a steadfast, uninterrupted, intellective motion.[142] It is hardly unlikely that such properties could be admitted of a Platonic Form, regardless of how novel a notion of it one may try to introduce. Therefore, explaining the Demiurge as the Form of the Intellect might not be the most fortunate choice.

Next, the Demiurge is also not to be associated with the World Soul, as either its equivalent or its part. This is so for reasons similar to some of those aforementioned: first, the Demiurge of the *Timaeus* is obviously external to the World Soul. Moreover, and unlike the case of the Forms, he is also its originator. This has been taken to be a controversial topic; however, the idea of the soul's strong dependence on a higher principle is present in quite a few late dialogues. In the *Timaeus* the Demiurge is said to be the World Soul's maker, who constructed her as prior to and older than the body in birth and eminence.[143] At *Statesman* 269c4–d3 the Stranger basically reiterates the main points of Timaeus' cosmogonic account: the revolving world is a living being endowed with intelligence and fitted together in the beginning by the god. *Philebus* 30d1–4 indicates that the cause, which is *nous* that acts demiurgically,

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140 This type of change would include the development of the animal seed, or billiard balls hitting one another. The same objection applies to Johansen's (2004) interpretation as well because the capacity for intellection and even sentiment can hardly be attributed to an abstract force of craftsmanship.

141 Because there is little doubt that the *Statesman* appellations "god" (269c5), "he who puts the world together" (269d1), "begetter" (269d9), "the self-revolving one" (269e5), "leader" (269e6), "divine cause" (270a3), "craftsman" (270a5), etc., are all meant to have the same referent, namely the world's creator and governor, who shows a strong affinity with the divine craftsman of the *Timaeus*.

142 For, Plato at *Laws* 897d-898b depicts the nature of rational motion, i.e., perfect rationality, by comparing it with a sphere continuously revolving round a fixed point.

143 See *Ti.* 34b10–35a1. A detailed description of his labor is given at 35a–37a.

is responsible for nothing less than controlling and manipulating the World Soul. Lastly, the *Laws* leaves little doubt that soul and *genesis* go hand in hand. Thus, the Athenian at *Laws* 892a2–5 laments over human ignorance of the soul's origin (*genesis*), which is among the first existents, prior to bodies. At 892c3–4 *psychē* is *gegenemēnē*, brought into existence, before fire or air; at 896c1–2, it comes into being (*gegonenai*) earlier than the body; at 892b1, 892c6, 896b2–3, and 966d9–e2 it is said to be older than the body or the oldest (*presbytatē*) of all things, while from 967d6–7 on, we learn that it is both the oldest and generated (πρεσβύτατον ἁπάντων ὅσα γονῆς μετείληφεν). There can only be one originator and director of the Platonic soul—he whom Plato himself identifies as such.

What we are left with is the most natural interpretation: the Demiurge is a *nous* of some kind. This should go without saying, since in the *Timaeus* and the *Philebus* the terms *nous* and *dēmiourgos* clearly refer to the same entity.[144] Obviously enough, Plato's claim in the *Sophist*, *Philebus*, and *Timaeus* that *nous* cannot exist apart from soul[145] obliged many distinguished scholars to presume that the Demiurge, who is a *nous*, must be somehow associated with the World Soul; however, this position has been thoroughly examined and successfully refuted by Hackforth (1936), Menn (1995), Mohr (2005), and Broadie (2012), and is no longer binding.[146]

Thus, it seems that the historical-exegetical evolution of the understanding of the Demiurge both in ancient times and in our age led to a similar result. In the twilight of antiquity, the late Neoplatonists were unanimous in identifying Plato's Demiurge with Intellect, their second hypostasis, superior and prior to the World Soul; in recent years, although no definite consensus has been reached, several eminent scholars have put forward strong arguments in favor of the separate *nous* interpretation that remain unrefuted. Considering, too, what has already been said in this section, that seems to be the right approach regarding what Plato intended to convey through his creator-god figure. In conclusion, I shall try to add some nuance to this rather vague inference.

Plato envisioned the Demiurge as a separate Intellect, distinct from both the Forms and the World Soul. His activity, as described in the *Timaeus*, is twofold: contemplative, when he eternally intellects the Forms,[147] and productive,

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144 This is also valid for *aition* and *theos*.

145 See fn. 63 *supra*.

146 The gist of their argument is as follows: the relevant passages' import is that intellect must be attached to a soul only when *already in something*, like a body—be it individual or universal, i.e., the world. They do not, therefore, exclude the possibility of a separate, unembodied, and—most importantly—unensouled *nous*.

147 This is, after all, the primary role of any *nous*, as per *Ti.* 51d–52a.

when he uses that intellection to shape the primordial chaos—internally prompted by his inherent goodness[148]—into the sempiternal god that is this cosmos. The Demiurge is thus an intelligent cause, a transcendent active principle behind the generation of this single and best of all possible worlds. To borrow Gail Fine's turn of phrase, Plato's creator-god is an E-*aitia* with a T-constituent.[149] That is, as the original source of change and orderly motion, he embodies the principle of efficient causation,[150] while as an entity permeated and defined by the desire to do good—and by acting upon it—he fulfils the teleological function as well. In other words, the Demiurge is a rational productive agent who acts for a purpose, which is the implementation of beauty and goodness on the stuff of creation, as far as possible.

This leaves little doubt that the *dēmiourgos* of the *Timaeus* is non-different from the *nous*, *poiētēs*, and *aitia* of the *Philebus* (*26e–30e*), who also bestows soul and *nous* to Zeus, i.e., the cosmos (*Philebus* 30d).[151] Accordingly, the Demiurge emerges as a key figure in late Plato, although his identity is not clearly spelled out. Nevertheless, it seems reasonable to state that Plato amended his views on causality and metaphysics in general, as well as that his theism grew strong in the last twelve or so years of his life.[152] By introducing the mysterious maker and father, he possibly came as close to the concept of a monotheistic God as the Greek mind could get.[153] Besides being a transcendent Intellect, he is also a personal creator and orderer, led to his actions by the desire to do good. Evidently, the acceptance of this thesis implies admitting a novel, hitherto unknown entity into Plato's ontology—perhaps one whose nature and status even Plato himself was pondering, and which he chose not to explicate.[154] On

148 See *Ti.* 29e–30a.

149 Where E and T stand for efficient and teleological, i.e., final *aitia* respectively. See Fine 2003.

150 To reiterate, as if to unambiguously associate his best of causes (*aristos tōn aitiōn*, 29a6) with active agency, Plato uses direct and simple language and refers to him with the names: father and maker (*poiētēs kai pater*, 28c3), artificer (*ho tektainomenos*, 28c6), craftsman (*dēmiourgos*, 29a3).

151 Brisson goes even a step further and claims that the four genera of the *Philebus* overlap with the inherent ontological structure of the *Timaeus. Nous* is, clearly, the Demiurge, *mikton* stands for the phenomenal world together with its soul, *apeiron* for the *chōra*, and *peras* for the Forms (Brisson 1998, 102–3).

152 See Taylor (1949, 371), who apportions the entire group of late dialogues to this period.

153 Nonetheless, its provenience is more similar to the theistic Vedānta concept (which includes the Supreme God Viṣṇu and a plethora of generated demigods), than to its Judeo-Christian counterpart. At any rate, Plato's god would be only omnibenevolent and omniscient, but not omnipotent.

154 A bid for elaborating on Plato's notion of the divine Intellect as the highest god is made in Hackforth 1936.

the other hand, the attempt to demythologize the Demiurge, i.e., to reduce him to the World Soul or any known Form or collection of Forms, would mean doing an injustice to the letter and purport of the *Timaeus*, *Philebus*, *Laws*, and, by implication, all the late dialogues. For they do proclaim the existence of an autonomous *nous*, which reigns over soul and matter, is a cognitive subject and a self-conscious productive agent, and represents the missing link in the *Phaedo*'s ontology and causal theory. This is the prime cause of the creation, the great god, the often misunderstood but still unneglectable principle of late Plato, made famous under the name of the Demiurge.

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CHAPTER 3

Goodbye to the Demiurge?

Timaeus' Discourse as a Thought Experiment

Luca Pitteloud

3.1 In the Demiurge's Footsteps

In the *Timaeus*, the universe is described as having been constituted by a Demiurge, who looked at an intelligible model and aimed to organize a chaotic milieu in the best possible way. The demiurgic work consisted in fashioning an ensouled, unique, and complete universe, that is, a living being possessing both a body, made from the four elements, and a soul, which is a moving cause ontologically located between the intelligible and the sensible worlds. Throughout Timaeus' discourse, we are not only put in the position of visualizing the Demiurge's work, but we also enter his mind and access his thoughts and feelings. Throughout the long history of interpretations applied to Plato's cosmological discourse, there has been no agreement on how to answer the question of *who* the Demiurge is. Ancient and contemporary answers to this question can be divided according to three main tendencies:[1] (i) the literal interpretation assumes that the Demiurge must be understood as a divine cause responsible for the actual fabrication of the universe;[2] (ii) the didactic interpretation necessitates admitting the demiurgic function of an independent and separated intellect in Plato's cosmological scheme;[3] (iii) the reductionist interpretation attempts to identify the Demiurge with another entity described by Timaeus in his discourse (somehow related to either the intelligible model[4] or the World

1 Chapter 2.1 provides a very useful and detailed survey of the different accounts dealing with the identity of the Demiurge. Ancient and contemporary interpretations seem to fall under the same interpretative categories with, every now and then, some new suggestions.

2 This could consist in one single act (as defended by Broadie [2011, 253]) or a recurrent event (Johansen 2008, 90–91).

3 For example, Brisson (1974) and Karfík (2007).

4 The Demiurge could then be a mythological representation of the Form of the Good (Zeller 1922, 694–95, 707–18), the Form of the Living Being (Halfwassen 2000, 51–54), or some other Form, like the Form of the Intellect (Menn 2009, 47). Those interpretations must recognize a kind of demiurgic capacity within the domain of the intelligible Forms: see Ferrari (2013).

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Soul).[5] Each one of these lines of interpretation depends on an understanding of the *Timaeus* as a whole and also, for some of them, on the necessity of attributing (or not) a doctrinal unity to Plato's thought.[6] My approach in this chapter will be based on the following methodological principle: in order to understand *who* the Demiurge is, it is necessary to appreciate the status of Timaeus' discourse. In other words, if we understand what kind of discourse about the universe Timaeus provides, then the role of the Demiurge will appear more clearly. More specifically, I wish to show that Timaeus' *eikōs mythos* could be understood as a thought experiment and that, consequently, the Demiurge must be conceived as an epistemological point of view adopted by anyone who attempts to fashion the universe in the *laboratory of the mind.*

The suggestion that the status of the Demiurge is related to the nature of Timaeus' discourse seems rather plausible, since our understanding of Timaeus' story will clearly influence the analysis of the different characters of the story. For instance, if there is enough evidence to support the idea that Timaeus' *eikōs mythos* must not be taken literally, then the Demiurge could appear to be part of the furniture of the discourse and not of the universe.[7] However, we should notice that the opposite is more likely: it is *because* a demiurgic cause is introduced at the beginning of the argumentation that Timaeus' discourse will imply a chronology and the distinction of a *before* and an *after* the act of production, and all the temporal vocabulary such a distinction implies. Timaeus' description of the coming to be of the universe strongly relies on a chain of deductive arguments[8] which starts at 27d5, before the beginning of

5 In that case the Demiurge would symbolize the World Soul (Carone 2005, 42–51) or the rational part of the World Soul (Cornford 1937, 39).

6 In some other dialogues, a demiurgic cause seems to be introduced, but in different contexts (see *Phlb.* 23d, 26e, 30b, *Laws,* 902e, *Soph.* 265a–c, *Plt.* 269c–d, 270a, 273b). The relation between the notions of intellect and soul is also at the center of various discussions (*Phlb.* 30c9–10, *Soph.* 248e–249d). Does Plato have a unified conception of a demiurgic cause in the Universe? Must the intellect always be placed within a soul? Is the Demiurge an intellect? It seems that the jury is still out on all these questions. My approach in this chapter is not directly concerned with these matters; however, I will make a few comments on some of them in the following pages.

7 This seems to be a rather self-evident point, but we must nevertheless keep it in mind as we address the questions of both the myth and the Demiurge. If Timaeus intends to tell us a myth about the coming to be of the universe, then we should not be surprised that he will use the perfect tense *gegonen* ("has come to be") and not the imperfect in 28b7, since this is a necessity involved precisely by the choice of a *once upon a time* discourse adopted about the universe.

8 When it comes to the thinking activity of the Demiurge (as differentiated from the one of the young gods), ten explicit deductions can be found: 1) the necessity of a cause for the sensible, 2) the choice of an intelligible model, 3) the construction of the universe

the *eikōs mythos,* by the introduction of three premises on which the rest of the discourse will be based:[9] 1) the Intelligible Being (27d6: *ti to on aei*) must be distinguished from sensible–becoming (27d6–28a1: *ti to gignomenon aei*), 2) the necessity of a cause (28a4: *aitios*) for all that becomes, and 3) the requirement for a demiurge (28a6: *dēmiourgos*) to use an intelligible model if he wants the result of his work to be beautiful (28a8: *kalon*). These three premises will be applied to the universe (*29d–30c*) in order to deduce that it has been produced by a divine (30a2: *theos*) demiurge. This deduction is not undertaken by the Demiurge but by Timaeus *in order to* justify the nature of the discourse (29d2: *ton eikota mython*) he is going to produce. It is usually[10] admitted that the transition from premises (1) and (2) toward premise (3), that is, the identification of the cause of the becoming with the Demiurge, is rather delicate. The distinction between the intelligible and the sensible is explained in the second part of Timaeus' speech in an argument (*modus ponens*) that deduces, from the epistemological distinction between *nous* and *doxa alēthēs*, an ontological difference between the Forms (of the Four Elements) and the sensible objects (51d3–51e6). In the context of this argument, a Form is said "to be ungenerated and indestructible, which neither receives anything else into itself from elsewhere nor itself enters into anything else anywhere"[11] (52a1–2: *agennēton kai anōlethron*), whereas a sensible object, which is like (52a5: *homoion*) the Form, "is perpetually in motion, coming to be in a certain place and again vanishing out of it."[12] This description is made within the context of the account of the ontological nature of the images (*mimēmata*) of the Forms appearing in the Receptacle (51e–53c). It must be noted that for Timaeus, both the Forms and the Receptacle are described as *uncaused,* whereas the sensible objects are causally dependent on the two other kinds. More precisely, the intelligible

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composed of a body and a soul, 4) the completeness of the model, 5) the unicity of the universe, 6) the composition of the world body by four elements, 7) the constitution of time as a moving image of eternity, 8) the constitution of the divine species as celestial entities, 9) the division of tasks between the demiurge and the young gods, and 10) the geometrization of the elements from two basic triangles. In each of these arguments, the Demiurge *validly* deduces from some premises (sometimes specified, sometimes implicit) specific conclusions about the properties of the universe.

9 Other premises will be introduced throughout the discourse (the beauty of order, the superiority of intellect, the relation between circular motion and thinking, the anteriority of the soul to the body, the necessity of inequality to explain mechanical motion, etc.).

10 For Ebert (1991, 52), Timaeus is committing a formal fallacy here (*Argumentationsfehler*), whereas for Sedley (2008, 102), the introduction of the Demiurge is completely legitimate.

11 *Ti.* 52a1–3: ἀγέννητον καὶ ἀνώλεθρον, οὔτε εἰς ἑαυτὸ εἰσδεχόμενον ἄλλο ἄλλοθεν οὔτε αὐτὸ εἰς ἄλλο ποι ἰόν. Translations by Cornford ([1937]) with minor modifications.

12 *Ti.* 52a6–7: πεφορημένον ἀεί, γιγνόμενόν τε ἔν τινι τόπῳ καὶ πάλιν ἐκεῖθεν ἀπολλύμενον.

is said to be the father (50d7) of the sensible, which seems to imply that within Timaeus' discourse, the intelligible itself could be a suitable candidate for being the *cause* of the sensible.[13] As a matter of fact, if the sensible is described as an image of the intelligible (50c–52d), its cause and model could well be the intelligible itself (as in the case of the model of an object reflected in a mirror).[14] Throughout Timaeus' discourse, we will learn that the World Soul has an essential role to play in order to explain change within the universe (37c–39e). When the three initial premises of the discourse are stated, it does seem possible to assume that the intelligible *could* be the cause of the sensible. At least, nothing seems to justify the appeal, out of the blue, to productive causality. Either this must be a fallacy[15] committed by Timaeus (not the best way to start a discourse!)[16] or the introduction of the Demiurge must have been made on purpose. What seems reasonable is that *once* the causality of the becoming is supposed productive, then the subsequent discourse will necessarily deal with a *process* of fabrication involving a model, a matter, and a craftsman, as well as all the vocabulary such a description involves. It is then *because* Timaeus wishes to give a discourse involving these three elements that productive causality is abruptly introduced at 28a6. Why does Timaeus wish to offer such a discourse? No explicit answer can be found in the text, but Timaeus nevertheless insists on the fact that (i) the Demiurge, choosing the best possible model (an intelligible model) and being himself the best of causes (29a5–6: *ho aristos tōn aitiōn*), will fashion a beautiful universe; (ii) it is hard to find the maker and the father of the universe and it is impossible (28c5: *adynaton*) to talk about him to everybody (28c3–5); (iii) the discourse offered is an *eikōs mythos* (29d).

Concerning (i), it seems to be a recurrent idea in the dialogues that crafts, when based on knowledge, will produce good results. More precisely, it is by looking at intelligible Forms that a craftsman can impose on his work a

13 At *Phlb.* 26e, the necessity of having a cause for all that becomes can also be found. In this context, although this is a highly polemical discussion, it seems that the soul can endorse this causal function (see 30b–d).

14 Although some scholars find the comparison between the Receptacle and a mirror illegitimate, it seems that Timaeus gives some clues in favor of it, as for example (i) the description of the mirror phenomena (46a–c) just before the introduction of the errant cause, and (ii) the way the liver is described as a mirror in which images from the reasoning part of the soul appear (very similar to the description of the Receptacle) (70d–72c).

15 The argument would become valid if an implicit premise is added, for instance, *in the domain of becoming every cause must be productive.*

16 Ebert (1991, 53–54) thinks that this fallacy is made in order to offer a parody of the Pythagorean's poor reasoning skills. However, it seems that Timaeus is rather cautious in his argumentation and validity appears to be preserved in all his deductions.

certain order (*taxis*), making it an organized (*tetagmenon*) and orderly entity (*kekosmēnon*).[17] This is exactly what the Demiurge of the universe will do in Timaeus' discourse. However, this cannot be the whole story, since according to (ii) and (iii), *when* applied to the fabrication of the universe, the search for its Demiurge will be difficult and can only be conducted within a very specific kind of discourse. One of the most vexed issues about Timaeus' account is indeed its discursive status. At 29b1–29d2, after having distinguished between two ontological (*ousia* and *genesis*), two cosmological (*paradeigma* and *eikōn*), and two epistemological (*alētheia* and *pistis*) levels, Timaeus adds a discursive distinction related (29b5: *syngeneis*) to the former, namely between consistent and exact discourses (*homologoumenoi logoi kai apēkribōmenoi*) and the likely myth (*ton eikota mython*). Does the introduction of the *eikōs mythos* imply that the limitation of the discourse is related to its object, the universe being an ever-changing image of its model?[18] Or is there any other way to understand the status of Timaeus' discourse?[19] It is clear that the discourse is qualified as an *eikōs mythos* not only because it addresses the question of the nature of the becoming, but also because it deals with matters about *the gods and the generation of the universe* (29c4–5: *theōn kai tēs tou pantos geneseōs*). It seems plausible that the gods in question here are the Demiurge and his helpers, the young gods, and that, in the expression *eikōs mythos,* the second term is as important as the first.[20] In this way, we should not reduce this expression to its

17 *Gorgias* 503d7–504a5. See also *Republic* X 596a–597d and *Cratylus* 389a–390e.

18 The limitations of the discourse do not only concern the Demiurge (ii) but also the enquiry about the universe. We should accept the myth and look for nothing further (29d2–3: *prepei toutou mēden pera zētein*). Although there have been many attempts to systematize the uses of *logos* and *mythos* in the discourse, none of them, it seems, has reached a definitive result. See Vlastos (1939); Mesch (2002); Brisson (2012); Grasso (2012).

19 In the classical interpretation that associates different kinds of discourse with different objects (so that a discourse about the sensible which is an *image* of the intelligible can only be *likely*), see Brisson (2012). Burnyeat (2005) has opposed a anti-ontological interpretation based on the idea that the *Timaeus* discourse is a piece of practical reasoning and can consequently be said to be *appropriate, fitting, fair, natural*, or *reasonable*, since it provides the best practical choice about the fabrication of the universe. It will become clear that what is suggested in this chapter focuses on another aspect, which is the *point of view* of Timaeus' discourse. It both recognizes that the distinctions between the sensible and the intelligible is at the heart of the discourse offered but also that it implies a kind of practical experiment about the fabrication of the universe.

20 This is contrary to what Vlastos (1939) defends when he affirms that the use of *eikōs* attenuates the distinction between *mythos* and *logos*. To be sure, the *Timaeus* discourse is primary a myth, which is sometimes called a *logos*. That there is a permeability between those two terms within the *Timaeus* could be indicated by the fact that Socrates' summary of his description of the ideal city is called a myth, in comparison to Critias' evocation of the true history of Atlantis (27d, 26e–27b). On that, see Johansen (2008, 40–43).

epistemologically limitative role. After all, it is commonly admitted that what Plato is offering us in the *Timaeus* constitutes his version (and maybe tribute) to traditional cosmogonies,[21] which is also an open dialogue with Presocratic philosophers like Pythagoras, Empedocles, the Eleatics, and the atomists.[22] Timaeus' discourse is indeed part of a cosmological tradition; however, the way this account is offered, through a myth of the production of the universe, is rather original since it allows us to *visualize*[23] the fabrication of the universe.

I would like to show in the following pages that it is possible to understand Timaeus' whole discourse as a kind of thought experiment allowing the audience (and the reader)[24] to follow in the footsteps of a divine craftsman. In other words, Timaeus is presenting to us the *great experiment* of fashioning the whole of the universe,[25] an experiment which needs to be achieved not only by (deductive and non-deductive) reasoning, but also with the use of our imagination. In consequence, the Demiurge will appear to be an epistemological tool allowing this experience to take place in our own minds, which will imply two important claims that enable us to understand the originality of the present interpretation in relation to others: 1) it does not seem necessary to attribute to the Demiurge an ontological role and 2) Timaeus' experiment cannot be "translated" into a purely argumentative account. In other words, and contrary to most didactic approaches, Timaeus' discourse could not be expressed in an abstract treatise of cosmology for experts based on empirical observation and deductive a priori arguments, for the use of imagination is an essential part of the process. In both the literal and didactic approaches, the Demiurge is understood as operating some causality in the universe. What is defended in this chapter is that it is not actually his primary function and, in

21 See Burnyeat (2005, 144–45).

22 See Taylor (1928, 17–19), who claims that the *Timaeus'* cosmology does not correspond to Plato's own position. For the Presocratic influences, see Cornford (1937, 40–43, 57, 168, 199–202), and for the presence of Platonic doctrine in the dialogue see Sedley (2019).

23 This is indeed one of the fundamental functions of a myth. As Grasso (2012) writes on p. 362: "Myth does pertain to image in that it may be said to unwind, as before our very eyes, the world's genesis, which (being outside our grasp because it belongs to a 'time' that antedates that of our possible experience, or more controversially time in itself, and because any knowledge of it would imply our accomplished knowledge of the precise nature of a divine action and thought) becomes representable for us in myth, by unwinding itself at once chronologically, along narrative principles, and 'visually', in the mental images which discourse elicits in the reader."

24 See 29d1: *hoi kritai.*

25 In the conclusion of his article, Burnyeat (2005) writes on p. 163: "Remember that Timaeus is trying to engage us in the almost ungraspable thought experiment of imagining what it would be like to craft *everything*."

consequence, if in Timaeus' cosmological scheme, there is no need for such causality, then it might be better not to attribute it to the Demiurge.

3.2 Timaeus' Discourse as a Thought Experiment

At the beginning of the *Critias*, Timaeus makes the following statement about the cosmos: "Now I offer my prayer to that god who came to be long ago in reality, but who has just now been created in my words."[26] Although this sentence is taken by some[27] to be important evidence for a literal reading of Timaeus' discourse, it seems nonetheless possible to understand the opposition between *logos* and *ergon* as highlighting the fact that Timaeus' account is indeed the discursive counterpart of the process of fabricating the world.[28] This process has been translated into words in Timaeus' speech.[29] The point of having described this act of creation is to offer us a detailed account of the universe in all its complexity. Thus, in which sense could this account be suggested as a thought experiment? Are we not risking the anachronistic application of a concept foreign to Plato's mind?

These two questions can only be answered if we first say a few words about thought experiments. Unfortunately, philosophers have not reached a unanimous definition of this very commonly used tool. It is usually admitted that thought experiments are counterfactual scenarios involving the use of imagination in order to obtain new knowledge about reality.[30] However, as soon as we try to understand how thought experiments work, a lot of questions arise: to what extent can imagination be used in thought experiments?[31] Is there a

26 *Critias* 106a3–4: τῷ δὲ πρὶν μὲν πάλαι ποτ' ἔργῳ, νῦν δὲ λόγοις ἄρτι θεῷ γεγονότι προσεύχομαι. Translation by Diskin Clay in Cooper (2009).

27 See Sedley (2008, 102) and chapter 4.1.

28 The contrast seems to be between two "births" of the world, one in the demiurgic work and the second in Timaeus' speech. On this, see O'Meara (2017, 38 n. 41). The allusion to antiquity (*palai*) could be understood in relation to the pseudo-history of Atlantis, which also seems to have taken place in a *fictional* past. On the fictionality of the Atlantis story, see Broadie (2011, 129–132) and Johansen (2008, 44–47).

29 For an interesting attempt to show how Timaeus himself is the demiurge of his own discourse, see Hadot (1983) and Osborne (1996).

30 A definition offered by Ierodiakonou and Roux (2011, 4) runs as follows: "thought experiments are counterfactual, they involve a concrete scenario and they have a well-delimited cognitive intention."

31 That is, the question of the degree of counterfactuality admitted: must the hypothetical scenario be potentially possible (and not being undertaken for practical, financial, or ethical reasons)? How can an utterly impossible counterfactual scenario be related to factual reality and thus allow thought experiments to achieve some progress?

difference between scientific and philosophical thought experiments?[32] What role does intuition play in thought experiments?[33] How is it possible to reach new knowledge about a specific object given the fact that thought experiments take place without the introduction of any new empirical data? The latter question is at the heart of the contemporary debate on thought experiments. Two extreme position have been defended, between which most of the other positions can be situated. On the one hand, the *argument view* claims that thought experiments are nothing but arguments in disguise.[34] This deflationist approach, which defends that *every* thought experiment can be *translated* into an argument, is, it seems, compatible with the didactic interpretation of Timaeus' discourse, in particular in relation to the Demiurge, who would be a mythological representation of an ontological principle. On the other hand, the *intuition-based account* (or alternatively the *Platonic account*) claims that thought experiments bring new a priori knowledge about nature.[35] Such experiments are undertaken inside the *laboratory of the mind*.[36] Between those two positions, many more moderate views can be found. One that is particularly interesting is called the *mental model account*, in which thought experiments consist in the manipulation of mental models in our mind.[37] According to this

32 Furthermore, thought experiments in philosophy are undertaken in its various domains (ethics, politics, epistemology, metaphysics, etc.). Is it possible to find some common criteria between them? On this, see Mach (1976, 136).

33 For Dennett (1984, 12), certain types of thought experiments are intuition pumps, namely those which focus on the important features: "Indeed one of philosophy's highest callings is finding ways of helping people see the forest and not just the trees. But intuition pumps are often abused, though seldom deliberately."

34 This view is defended by Norton (2002), for whom thought experiments are picturesque arguments or *reductiones ad absurdum* based on empirical premises and following the rules of deductive and non-deductive inferences. The use of imagination in thought experiments is a useful psychological and didactic tool but does not add anything new to the arguments developed.

35 This view is defended by Brown (1991) and developed within a very specific conception of an epistemology of the a priori knowledge associated with a defense of the existence of mathematical objects and the laws of nature. This view is Platonic in the following sense: "Some 'pictures' are not really pictures, but rather are windows to Plato's heaven. [...] As telescopes help the unaided eye, so some diagrams are instruments (rather than representations) which help the unaided mind's eye" (Brown 1999, 39).

36 Brown's favorite example of a Platonic thought experiment is Galileo's refutation of Aristotle's theory of free fall, in which no new empirical data is being used, not being a logical truth either. Einstein's thought experiments in Special and General Relativity are other classical examples of such procedure.

37 See Miščević (1992). Although he defends the mental model view against Brown's Platonist view, this view can also be accommodated within an aprioristic view (which is exemplified by the Demiurge's a priori reasoning process). My view in this chapter is that

view, our ability to build mental models (that is, quasi-spatial, mental representations furnished with previous pieces of knowledge),[38] and then manipulate the furniture of these models, allows us to access new knowledge that could not have been reached without this manipulation of mental images. One interesting aspect of this approach is that it allows an association between thought experiments and fiction.[39] Dystopic fiction like *The Handmaid's Tale* or *Brave New Word* describe counterfactual situations that take place inside the reader's imagination.[40] Nevertheless, this might seem to be too generous a way of defining thought experiments, for if any piece of fiction could be seen as a thought experiment, we might wonder if the specific mechanism of thought experiments might not therefore become diluted, with thought experiments consequently belonging to a sort of a *fourre-tout* category.[41] It is indeed necessary to circumscribe thought experiments within a more precise definition, and to that end, three criteria[42] can be suggested:

1. A thought experiment must always involve a counterfactual scenario. The degree of counterfactuality can vary but the experience should always be *connectable* to our factual reality in order to be effective. Counterfactuality will allow the experiment to be led within the laboratory of the mind. As in the case of scientific experiments, a thought

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Timaeus' *eikōs mythos* corresponds precisely to the construction of a mental model that can lead us to some new knowledge about the cosmos, which purely argumentative reasoning could not achieve. What matters is the manipulation of the (mainly geometrical and stereometrical) contents associated with the conclusion of the Demiurge's deductive process, which is indeed a priori.

38 As put by Miščević (1992, 220): "Typical examples of mental models are involved in understanding stories, or in ordinary planning of activities. When a reader encounters a description of a situation, she builds a model, a quasi-spatial 'picture' of it. As new details are supplied by the story-teller, the model becomes updated." See also pp. 223–24, for some justification for the direct link between mental modelling and geometry. As we shall see, mental representation in Timaeus' speech is undertaken with the necessary use of geometry and stereometry.

39 See Swirski (2006).

40 Davenport (1983, 31) writes: "Fiction is an experiment because in order to understand and appreciate it we test the truth of the ideas and the lifelikeness of the methods of the author. Fiction is a thought experiment because this testing takes place in the imagination."

41 It does seem that the counterfactual scenarios described in a few words like Putnam's *Brain in a Vat* and portrayed in the two-hour-long film *The Matrix* are two formally different versions of the same thought experiment. Format and length do not appear to be decisive in delimiting thought experiments.

42 For a different list of criteria see Becker (2017, 48) and Ierodiakonou and Roux (2011, 11–19).

experiment must be able to test the veracity of a hypothesis.[43] However, it might be excessive to ask for every thought experiment to be *like* a laboratory experiment, where an independent variable is modified in order to examine the effect on a dependent variable (for example, observing the changes in pigmentation of an organism caused by the modification of its temperature).

2. A thought experiment should not be transposable into a (deductive or non-deductive) argument. This criterion is precisely the one rejected by the *argument view*. If thought experiments cannot be turned into arguments, this would imply that they are alternative tools that are used to make progress in philosophy. Since no new empirical data is used in the process of thought experimentation, the use of imagination, and more precisely the manipulation of images, must be decisive in order to reach new conclusions that could not be obtained by mere arguments.
3. Thought experiments must allow a cognitive progress. In order to distinguish thought experiments from literature, for example, it must be assumed that by the use of thought experiments, philosophers aim at new discovery and, in this way, as with any scientific experiment, there must be, for every thought experiment, a before and an after.[44]

At this point the reader might ask: what does all that have to do with Plato's *Timaeus*? A considerable amount, I wish to argue. The fact that thought experiments were widely used in antiquity seems unpolemical[45] and amongst the most famous ones (like Archytas' edge of the universe, Theseus' ship), Plato's ring of Gyges[46] comes to mind. It does seem to satisfy criteria (1)[47] and (3),[48]

43 In both senses of the hypothesis: being consistent with known observations and producing a coherent theory which can adequately explain known phenomena.

44 See Ierodiakonou and Roux (2011, 24–25).

45 For some useful considerations regarding thought experiments in ancient philosophy (some of them were introduced to support a theory, some to refute one, and others to elicit the suspension of judgment) and an analysis of the vocabulary used for such experiments (*amphidoxoumenon paradeigma, paradeigma, parabola, logoi*, etc.), see Ierodiakonou (2005); Ierodiakonou (2011) and Ierodiakonou (2017). The objective of this chapter is to suggest that Timaeus' *eikōs mythos* belongs to the same category.

46 *Republic* II, 359a–360d. In the *Timaeus*, a scientific thought experiment is undertaken (63b–c), (see below on p. 90). A thought experimental dimension of the pre-cosmic chaos should also be addressed (see pp. 91-92 below), especially when it comes to the question: does a like to like principle produce a *cosmos* or merely a sorting of the elements?

47 The counterfactual experience implies an examination of what two human beings (one just, the other unjust) would do if they found a ring that can make them invisible (a situation impossible in the factual world).

48 The example aims to offer proof (*tekmērion*) that justice is chosen only because of the fear of punishment.

but perhaps not criterion (2).[49] If the *mental model account* is admitted, then we should not limit ourselves to accepting only short counterfactual stories like Gyges' ring as thought experiments, but ask if other kinds of discourse, like the *Statesman*'s myths, could be taken for thought experiments.[50] It has also been defended that the whole of the *Republic* could be read as a political thought experiment, in which the possibility of a just city is imaginatively tested.[51] Without entering into the details here, it is nevertheless interesting to note that some characteristics of the *Timaeus* appear to be compatible with thought experiments. First of all, at the beginning of the dialogue, Socrates' summary (19a8: *kephalaia*) of a discussion dealing with the ideal city is an allusion to the *Republic*'s model in heaven (492b2: *en ouranōi paradeigma*), a possibly utopian city described by Socrates in the *Timaeus* as a myth (26c8: *en mythōi*). This derivative[52] usage of the concept of myth is opposed to the true story (20d7–8: *atopos* but *alēthēs*, 26d1*: epi talēthes deuro*) Critias will deliver on the rivalry between archaic Athens and Atlantis. This *historical* account is the answer to Socrates' wish to see a *living* example of the *aristē politeia* he has sketched (19b3–c2). At *Republic* 499c7–d6, it is clearly stated that the ideal city, whose realization has been described as not impossible (499d5: *oud' adynatos*), might be found in the past, in the future, or in a distant location. Critias' speech could be seen as a *possible* exemplification of Socrates' ideal city. What seems to be fundamental here is the *temporal* distance, which is precisely described by Critias, in order to detach the description of this city *in motion* from our own factual reality.[53] The crucial point is that we are looking for, at

49 Perhaps it could be transformed into a *reductio ad absurdum*. For the necessary use of imagination within the process of transforming the self in the Gyges' ring story, see Notomi (2019, 8).

50 For an analysis of thought experiments in Plato, see Becker (2017). Although this goes beyond the scope of this chapter, it has to be noted that not every Platonic image, simile, metaphor, and myth is likely to be a thought experiment. It will depend on the satisfaction of our three criteria. On the other hand, the *Statesman*'s myth (268d–274e), if not taken literally, might well be a political thought experiment describing some sort of state of nature. Sometimes it is suggested that the allegory of the Cave (*Republic* 514a–518b) could be a thought experiment, but it does not seem to satisfy criterion (2) since Socrates, at 517a–c, explains the details of the images he has introduced as if it were an argument.

51 Miščević (2012) claims that the *Republic* is a macro-political thought experiment, inside which some micro-thought experiments (like Gyges' ring) are being developed. See Aristotle, *Politics* II, 1165a18, for some comments on the ideal and utopic aspects of the *Republic*'s project.

52 On this see Brisson (2005, 43). A similar usage can be found at *Laws* VI 752a2.

53 Instead of Critias' pseudo-history, we could well imagine a piece of science fiction that would describe a future Athens fighting against a dystopian Atlantis. This point is recognized by Rivaud (1925, 16) and Johansen (2008, 45).

the beginning of the *Timaeus,* a possible (and also imaginary) living exemplification of the idealized best constitution. In this sense, both the *Republic*'s ideal city and Critias' description have mythical characteristics, since they are discourses which *could* be true,[54] and perhaps this is why they are both *appropriate* (20d3: *epitēdeios*). The dimension of ideality is largely present in the *Timaeus* as a whole, not only in Socrates' summary of the *ideal* constitution and in the *fictional* history reported by Critias, but also, I wish to suggest, in Timaeus' *eikōs mythos*, which describes the possible experience of the creation of the whole universe.

However, if Timaeus' speech is somehow an exercise of the imagination, does this not create tension with Plato's critical considerations of the fabrication of images? As a matter of fact, imagination is associated in the dialogues with the capacity to produce images, mainly by imitating a model. If it is true that from an epistemological point of view, *eikasia* is the lowest power of the soul,[55] some of Plato's most important philosophical developments are undertaken using the production of images.[56] Yet in *Republic* X (595b–597a), Socrates distinguishes between two types of imitators (*mimētēs*), those who are imitating the Forms (craftsmen) and those who are imitating the image of the Form (artists like painters). The problem with members of the second category is that they do not imitate the object as it is, but as it appears (597a4–5), and, in aiming at being taken for the original, they are producing illusions.[57] In the *Sophist,* the art of producing images (236c6: *eidē tēs eidōlopoiikēs*) is divided into two sorts of production, that of copies and that of illusions (236c7: *eikastikēn kai phantastikēn*). Thus, a distinction between authentic images and deceptive appearances[58] must be kept in mind when considering Plato's use of images. In the case of the *Timaeus*, as will be seen, the use of an *eikōs mythos* must be understood as a necessary combination of arguments and images in order to reach knowledge of our universe.

54 In the *Republic*'s criticisms of myths (393c1), Socrates describes them as invented discourses (and consequently lies [*pseudos*]) which *might* possess some truth (*alēthes*).

55 *Republic* 509d9–510a3, 511e, 533e–534a.

56 On the importance of images in Plato's philosophy, see Notomi (2019).

57 At *Phd.* 92d2–5, arguments that are based on images are said to lead to illusions. See also *Tht.* 162d5–163a1.

58 This is exemplified by the situation of the prisoners in the Cave (*Republic* 515c6–d4).

3.3 The Great Experiment

Timaeus' speech gives the reader the impression of being both a rigorous piece of argumentation developing a precise chain of deductions (the Demiurge's reasonings)[59] and an impressive exercise of the imagination. Imagination is used, within the discourse, in place of empirical experiences: in the whole discourse, only three experiences are described. Two of them are empirical experiments (on the formation of odors [66e] and on the role of fibers in blood [85c-d]), and the third one is a thought experiment (63b–c) where we are led to imagine (63a2 and 63b2: *ei*) two very Archytas-style counterfactual situations: i) that a person going around a sphere could be placed at the center of the universe in order to conclude that the notions of "up" and "down" are relative to the position of this person on the sphere, and ii) that the same person could go to the upper region of the universe, which is allotted to fire, stand there, detach portions of fire, weigh them in the scales of balance, and then, repeating the experience in the earthy region of the universe, that time weighing portions of earth, conclude that the concepts of "heavy" and "light" are also relative to the position in the universe where respective portions are weighed. Timaeus is indeed rather critical about the possibility of empirical experimentation. After having explained the nature of colors and pigmentations, described precisely as a likely myth (68d2: *ton eikota mython*), Timaeus admits:

> But any attempt to put these matters to a practical test would argue ignorance of the difference between human nature and divine, namely that divinity has knowledge and power sufficient to blend the many into one and to dissolve the one into many, but no man is now, or ever will be, equal to either task.[60]

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59 This a priori process of deducing the properties of the universe is called by Sedley (2008, 110), "the project of intellectualizing physics."

60 *Ti.* 68d2–7: εἰ δέ τις τούτων ἔργῳ σκοπούμενος βάσανον λαμβάνοι, τὸ τῆς ἀνθρωπίνης καὶ θείας φύσεως ἠγνοηκὼς ἂν εἴη διάφορον, ὅτι θεὸς μὲν τὰ πολλὰ εἰς ἓν συγκεραννύναι καὶ πάλιν ἐξ ἑνὸς εἰς πολλὰ διαλύειν ἱκανῶς ἐπιστάμενος ἅμα καὶ δυνατός, ἀνθρώπων δὲ οὐδεὶς οὐδέτερα τούτων ἱκανὸς οὔτε ἔστι νῦν οὔτε εἰς αὖθίς ποτε ἔσται. On the expression *basanon lambanein,* its juridical context (torture of a slave to force him to admit his crimes) and the limits of empirical experimentation in Plato's time (measuring tool, mathematical knowledges, etc.), see Brisson and Meyerstein (1991, 69–76). This limitation must be kept in mind in the context of the interpretation of Timaeus' account of vision (47a-c) and its role in astronomical knowledge.

The radical distinction between human and divine nature when it comes to mixing the many into the one, and to dissolving the one into the many,[61] is precisely what the Demiurge's task is, and even if it is claimed to be beyond human capacities, we are nevertheless placed, in Timaeus' speech, inside the mind of the divine craftsman. In other words, we are put in the challenging situation of attempting to resolve the problem of the participation of the multiple in the one (and vice versa) and this resolution, not completely possible for us, implies more than just a priori deductions. Could, then, the use of imagination play a central role in Timaeus' speech? Since the experimental process is, according to Timaeus, a limited one, it might be suggested that the introduction of demiurgic craftsmanship appears to be a particularly relevant device in order to test some hypotheses within the laboratory of the reader's mind.

Some scholars have claimed that the description of pre-cosmic chaos (52d4–53b5) must be understood as a thought experiment.[62] This passage constitutes a description of the state of the universe *before* (53a8: *pro*) the Demiurge initiates his work, when the images (*mimēmata*) of four elements already exist and appear in the Receptacle. These images are called traces (*ichnē*) of the elements that shake the Receptacle and are, in turn, shaken by it (52e). They are not yet configured by the Demiurge (by means of shape and number) and they appear as affections (*pathē*) with powers (*dynameis*) that are neither alike nor evenly balanced, without proportion and measure (*alogōs kai ametrōs*). These traces, which should be identified with the images of the Forms of the four elements, would not describe a pre-cosmic state of the universe, but a thought experiment in which we imagine how our universe would be without the Demiurge's action. This state of the universe could be reached through a sort of abstraction[63] of *all* demiurgic work in the

61 See *Phlb.* 15c–d for a similar expression. It is likely that it is an allusion to the relation between the one Form and the many sensible objects participating in it.

62 For example, Brisson (1974); Carone (2005); Fronterotta (2010). For some arguments against a counterfactual reading and a distinction between the didactic and counterfactual interpretations, see chapter 4.1.

63 The abstraction of intelligibility in the universe appears to be frequently undertaken in the dialogues (*Prm.* 165e2–166c2, *Tht.* 201d–202c, *Soph.* 243d–244b, *Phlb.* 14c–e). However, in the case of the pre-cosmic chaos, Forms are not out of the picture as their images appear in the Receptacle. Can this process be achieved with a mere *reductio ad absurdum* (as defended in the argument view of thought experiments)? In that case, why, if the demiurgic work is abstracted, would the traces be *in motion*? What would be the cause of these motions? Two abstractions (or thought experiments) are made in the dialogues regarding what the state of the world would be without the soul (*Laws* 893c1–895b7 and *Phdr.* 245c5–246a2). In both cases, the absence of soul would lead to a state of complete rest.

universe.[64] However, it must be noted that when Timaeus describes this pre-cosmic state, he claims that the traces of the elements can be *seen* (52e1: *pantodapēn men idein phanestai*). But seen by whom, since at that moment in the universe's history, no living being has yet been created to see those traces? The only candidate seems to be the Demiurge. However, in order to be able to see those traces he would need to have bodily organs. It seems clear that he possesses an intellect,[65] but surely not a body. What is more plausible is that it is we, as readers of Timaeus' speech, who can put ourselves into the Demiurge's mind and look, so to speak, at the whole universe before and after it has been fabricated. That is, the Demiurge is an epistemological perspective we must adopt in order to *look* at the universe from the outside, a point of view that is not empirically accessible for us or reducible to abstract thinking.

In that case, it might be suggested that the thought-experiment dimension of Timaeus' speech does not only concern the description of pre-cosmic chaos. That would be a far too limited and partial interpretation, since what we are led to "see" in Timaeus' myth is the great experiment of fashioning the universe, and not only what the universe would be before initiating this experiment. Undoubtedly, the description of pre-cosmic chaos is only part of the Timaean thought experiment.[66] But would this view not be too generous? Of course, not everything that Timaeus describes could be seen as a thought experiment. In particular, all that constitutes the physiological and biological descriptions of living beings (from 69a), a work that is completed not by the Demiurge but by the young gods, seems to be a rather empirical account of how they are teleologically organized. I would like to suggest that, within the demiurgic process, the thought-experiment point of view is adopted at two specific and

64 That is, what the universe would be without the Demiurge and also without the World Soul, as it is fashioned by him. This is a polemical issue, since the motion of the traces is sometimes thought to be caused by an irrational part of the World Soul (as defended by Cornford [1937], 209–10) or even by an evil soul (defended by Plutarch). However, nothing of the sort can be found in Timaeus' speech.

65 See 28a1, 28a6–7, 39e7–9, 46c7–e6.

66 The fact that the Demiurgic point of view offers to the reader what would be the universe without intelligibility (and not only without the action of the World Soul), does not imply that the cosmological thought experiment concerns only the counterfactual situation of the universe before or without the action of the Demiurge. If the thought experimental process implies to put oneself within the Demiurgic mind, then there are two sides of the same medal of counterfactuality: if a God would like to translate the intelligibility of a Model in the universe, i) how would he do it and ii) to which *milieu* would this intelligibility be bestowed upon. Furthermore, the Demiurge does not cause, nor perfectionate, the participation (via the geometrization of the traces) but contributes to providing a dynamic mental model of how participation works.

restricted moments: the macro- and micro-investigations into the universe. This is when the Demiurge constitutes all the things that are not reachable by direct human experience: the macrocosmic dimension deals with all the characteristics of the universe that must be imagined from outside it, and the microcosmic dimension deals with the description of the invisible particles, out of which the four elements are made. To be more precise, the question that the *Timaeus*'s thought experiment aims to answer is: if an intelligent god were creating the best possible *cosmos*, how would it proceed?[67]

From the macrocosmic perspective, it is clear that the demiurgic point of view is external to the universe as a whole. When describing the body of the universe, made from the entirety of the four elements, Timaeus declares that there is nothing left outside of the spherically shaped universe (32c8: *exōthen*).[68] Nonetheless, one of the first claims about the universe is that it can be seen (*horatos*), touched (*haptos*), and has a body (*sōma echōn*) (28b7–8). As those properties are attributed to the universe as a whole,[69] it appears that it is only from the outside that the universe can be seen. This is what we could do if we were to adopt an external point of view on the universe, which happens to be the point of view of the Demiurge. But what would be gained by taking such a perspective? After all, the Demiurge's reasoning (from 29d7) seems to be a priori and deductive: as he is good (*agathos*), the result of his work will be the best (*aristos*) and the most beautiful (*kallistos*) result possible (*kata dynamin*). As everything in the visible universe can be found in a disorderly (*ataktos*) state, he will bring order to (*taxis*) in the pre-cosmic chaos. Now, the ordering of the chaotic milieu is undertaken according to the following line of thought: (i) the sensible universe will be more beautiful if it possesses Intellect (*nous*), and Intellect (in sensible realities) must be found within a soul that is itself united with a body, so the universe as a whole will be a living being (30b1–6); (ii) in order to constitute the best possible world, the Demiurge must choose as a model for his work an intelligible Form, and as the universe is a living being,

67 More specifically, the thought experiment aims to answer questions about what there is little or no evidence (the macro and micro-cosmic dimensions of the universe and the nature and functions of the World Soul). For a defender of the literal approach, there is no counterfactuality here. What is defended in this chapter is that to reach the best possible understanding of the universe, it is necessary for us to think and reason as if we were creating gods. The artisanal metaphor allows the emergence of a laboratory where the *cosmos* can be created in our minds.

68 In the description of the Demiurgic work between 27d–47e, there are six references to an outside of the universe (32c8, 33a4, c1, c2, 34b4, 36e3).

69 Taylor (1928, 69–70) argues that this affirmation is false since the world cannot be seen and touched as a whole. Against this idea, see chapter 5, n. 5.

its model will be the Form of the living being (*ho estin zōion*), which possesses as parts the four Forms of the Living Species (gods, celestial, terrestrial, and aquatic living beings) (30c2–31a1); (iii) since the model of the universe is all-inclusive and complete (*teleios*), the Demiurge, wishing the universe to be as similar as possible to this model, constitutes a complete, visible universe containing all the four species and its members (30d1–3); (iv) since the model is unique and the universe, as its image, must resemble its model, the universe will be unique (31a2–31b3); (v) to be visible and tangible, the world body must be formed by fire and earth, and in order to attain more beauty, these two elements must be unified (*synagōgos*) with geometrical proportions (*analogia*), which implies the introduction of two middle terms (in the case of a three-dimensional reality), namely air and water (31b4–c4); (vi) the world body must be bodily self-sufficient (33d1–d3); (vii) it must possess a spherical shape (33b1) and a circular motion, which is the motion most related to Intellect (34a); (viii) the World Soul is the cause of this motion (36b6-c4).[70] It is constituted as a blending of intelligible and sensible beings (34b10–35b3) and is, in consequence, an intermediary between these two levels, capable of being in contact with both of them (36e5–c3).

The details of these arguments are rather complex, but what matters to us is that they are all part of a deductive chain that aims to establish what is the best way for the Demiurge to bestow properties of the model on the visible universe. If the parts of it that deal with empirical data might seem to be an exercise in *reverse engineering* (for example, the Form of living being is constituted by four parts *since* there are four species and four elements in our universe), all that cannot be empirically verified appears to qualify as a Brownian Platonic thought experiment. The Demiurge deduces the properties of the universe by evaluating the best way to transfer the properties of the model to the universe. Argument (iv) is a prime example of this procedure:

(P1) The model of the universe is unique,

(P2) If a model is unique, then its image must be unique in order to resemble its model as much as possible,

(C) The universe must be unique.

70 The World Soul is mathematically structured according to arithmetic, geometric, and harmonic proportions. These proportions will help to explain the motions of the planets and the fixed stars, all commensurably reduced to two fundamental motions (the Same and the Other). Time, in turn, is an image of eternity, which progresses according to the number (*kat' arithmon iousan*) of the celestial clock (38c–39e).

No explicit defense of (P2) can be found in the argument given by Timaeus.[71] Timaeus claims that *in order to* make the image like the model in respect to its uniqueness, the universe has to be unique. (P2) can be supplied if we admit that for any image, in order to more closely resemble its model, it must possess the property of the model *qua* model.[72] The classical relationship between intelligible and sensible contains a *one over many* assumption that implies there is one unique Form over many particulars participating in it (for example one Form of human being and many sensible human beings). In this way (P2) seems to be false. However, the Demiurge's reasoning appears to admit that, *in the specific case of the universe as a whole*, if it has to be the best possible image of an intelligible model, it must not only be a whole organized and unified by mathematical proportions, but it must also be unique.[73] Nevertheless, this affirmation seems to come into conflict with another premise admitted by the Demiurge: the product of his work will be better if it is all-inclusive (30d–31a). For this very reason, the Demiurge constitutes the four living species (each of them related both to one of the four elements and to a respective region in the universe).[74] In the context of this argument, the Demiurge concludes that a complete and diverse cosmos is better than a universe containing only one species (a universe inhabited only by celestial gods, for instance, or better yet, with only one planet exemplifying a perfect circular motion). Would the universe not be more complete if it were constituted by more than one cosmos? This possibility is explicitly recognized at 55c4–d6, after the description of the constitution of the five solids, which can be constructed from the two basic triangles (right-angled isosceles and right-angled scalene) that are the basic constituents of all bodily realties. As four of these solids are associated with

71 Timaeus affirms in 31a8–b2, "Accordingly, to the end that this world may be like the complete Living Creature in respect of its uniqueness, for that reason its maker did not make two worlds nor yet an indefinite number." ἵνα οὖν τόδε κατὰ τὴν μόνωσιν ὅμοιον ᾖ τῷ παντελεῖ ζῴῳ, διὰ ταῦτα οὔτε δύο οὔτ᾽ ἀπείρους ἐποίησεν ὁ ποιῶν κόσμου.

72 This inference has been harshly criticized by Keyt (1971). See also Parry (1979) and Lennox (1985, 214–17). Alternatively, Burnyeat (2005, 161–62) claims that what we are facing here is not a deduction but a piece of practical reasoning, as described by Aristotle's famous example: " 'I should make something good; a house is something good'; at once he makes a house" (*De motu animalium* 7 701a16–17). The crucial point depends on the acceptance, or not, of (P2).

73 The argument is completed by another one: the bodily self-sufficiency of the universe (which is entailed by the exclusion of any external threat that could lead to the cosmos' destruction) implies that the Demiurge must use the whole of the four elements' masses in order to fashion a unique universe (33a–b).

74 From above to the center of the universe: Fire (god)—Air (celestial beings)—Water (aquatic beings)—Earth (terrestrial beings).

each one of the four elements, the function of the fifth (the regular dodecahedra) remains open. Two possibilities are suggested: (i) this solid might be attributed to the universe as a whole (which seems to contradict the previous affirmation at 33b, that the universe has a spherical shape) and (ii) a suitable (55c7: *emmelōs*) possibility involves a plurality of universes—more specifically, asks Timaeus, why would we not admit five *cosmoi* (each of them possessing the shape of one of the five solids) (55d2–3)? It is interesting to note that Timaeus acknowledges it is quite reasonable to feel some doubt about it (55d4: *eikotōs diaporēsai*) and that someone else, looking at other considerations, might have a different opinion (55d6: *hetera doxasei*). Timaeus will stick to the idea that the universe is unique, but, as he says, his choice is made according to the likely account (55d5: *kata ton eikota logon*).[75]

The fact that Timaeus interrupts his myth and claims that, when reconstructing the Demiurge's choice, we must admit the possibility of alternative hypotheses, is quite significative. What cannot be ruled out is that the Demiurge would build five *cosmoi.* After all, this choice would respect the requirement of completeness: just as the universe is more complete (and perfect) through possessing all the living species, it would also be more perfect if the five solids were to be exemplified as the shapes of five different *cosmoi*.[76] By walking in the Demiurge's footsteps, in trying to deduce the properties of the universe from the intelligible model, we are led to undertake an exercise of testing different hypotheses and reconstructing alternative configurations of the universe. This experimental process, as it appears, needs to be carried out within our mind.[77] One might argue, however, that the use of imagination

75 At the beginning of the *Critias*, Timaeus claims that alternative explanations of the universe are possible (106b1–5). On the difficulty of discovering the Demiurge's choices and reasonings, see Burnyeat (2005, 162) and Sedley (2008, 113).

76 Since beauty is primarily related to the idea of a unified and ordered whole, in the hypothesis of the five *cosmoi,* these should be unified proportionally, as the four elements in the universe are with regard to geometrical proportions. Provided that the five *cosmoi* could be proportionally related to one other and unified by *philia*, nothing in this possibility is absurd.

77 Another famous example of visualizing other possible choices in the construction of the universe occurs when the young gods fashion the human head. They have two possible alternatives: a stronger head in terms of resistance (thus enabling a longer life), but with decreased sensibility and a lesser ability for the soul to be in contact with the outside world, or the opposite. They opt for the latter solution as they believe human beings will be able to lead a happier (but shorter) life that way (75b–d). Nothing prevents us from imagining an alternative universe inhabited by human beings with more resistant heads. This, of course, is not our universe. But visualizing alternative versions of our universe helps us to understand the premises on which our factual world is based and how these premises *combine*. In the case of the young gods, their productive work consists in

in these cases (visualizing different possible configurations of the universe) is a didactic tool, but by no means necessary. Does a divine, external view of the universe really allow us to obtain new, non-empirical information about the universe? In fact, it could help us to take a step back from the chain of deduction and visualize how the individual members of this chain can be combined, so as to offer the best possible description of the universe given the limits of human knowledge and the acceptance of competing hypotheses.

Furthermore, the Demiurge not only offers us an external point of view on the universe, but also an internal one. When describing the invisible constituents of all things, the Demiurge could be seen as a kind of *microscope* that helps us to visualize the interior of corporeal bodies. Bodies in (and of) the universe are made of the four elements, but these are not the ultimate constituents of bodies. Timaeus develops the following argument: (i) the four elements are bodies; (ii) bodies have depth; (iii) depth must be bounded by surface; (iv) every surface, which is rectilinear, is composed of triangles (53c). Two kinds of triangle said to be the most beautiful (53e1: *kallista*), namely the right-angled isosceles and the right-angled scalene, are chosen to be the basic constituents of bodies. From these two basic triangles, the Demiurge will constitute two more complex plane surfaces (square and equilateral triangles). These two plane surfaces will then be combined in order to obtain four regular solids: from the square, the Demiurge will build the cube, and from the equilateral triangle, he will build the pyramid (tetrahedron), the octahedron, and the icosahedron. Each of these four solids will then be assigned to a primary body (55d–56c). At 56c–57d and 58c–61c, Timaeus shows how the transformation of the elements will occur between them according to three premises: (i) because they are made from two different basic triangles, isosceles for earth, scalene for fire, air, and water, only transformations between the three latter elements will occur—earth cannot be transformed into any other element and vice versa; (ii) the four regular solids (and their respective parts) are not visible in themselves because of their smallness (56c1: *dia smikrotēta*), but when a certain number

imitating what the Demiurge has already built (the universe as a whole), taking into consideration the best possible way to persuade the corporeal necessity, and not in bestowing the properties of the intelligible on the sensible, as in the case of the divine craftsman. These alternative versions of our universe are not *possible worlds*, as this notion is generally introduced in the context of modal logic. Timaeus' aim is not to investigate the necessary, possible, and impossible properties of the universe, but to show how our universe is the best possible image of an intelligible model. However, by placing us inside the mind of the divine craftsman, he seems to be a precursor of the medieval approach to thought experiments, which consists in testing hypotheses by confronting them with God's absolute power. On this, see Grellard (2011).

of the solids are aggregated, the mass constituted by them can be seen; (iii) transformation between the elements can be calculated as it depends on the number of basic triangles.[78] The different aspects of this economical, geometrical atomism are based on a stereometry *in motion*. We should then imagine these triangles as *moving* configurations of the Receptacle. Mechanical motion is indeed caused by the heterogeneity (58d8: *anōmalotēs*) that can be found between a mover and a moved object (in that case the inequality [*anison*] of size [of their sides, angles, etc.] between the triangles).[79] That is, to get the complete picture of the transmutation of the elements, we are led to visualize something like "a child's puzzle"[80] or a "Legoland,"[81] and to imagine how different combinations can take place in the microscopic parts of the universe, combinations based on the arithmetical laws of equivalences (see footnote 78).

This mental experiencing is at the heart of Timaeus' myth when it is applied to the transformations of metals (59c5–d3). In fact, Timaeus recognizes that providing an exhaustive description of their transmutations within the myth (59c6–7: *tēn ton eikotōn mythōn … idean*) would cause a great deal of recreative (59d2: *paidia*) pleasure. Working out all the cases of transmutation in the universe is, like a children's game, an activity that would cause some pleasurable results, as is also, I think, the activity of placing ourselves inside the Demiurge's mind and undertaking the great experiment of fashioning the whole universe. Just as in the eventuality of multiple *cosmoi*, Timaeus admits that his choice of the two most beautiful triangles is not certain: he leaves open the possibility that a friend (54a5: *philos*) could find a better kind of triangle and contradict (54b1: *elenxanti*) his theory.[82] In any case, due to the complexity of the enormous task of creating the whole universe, the use of mental representations

78 1 particle of fire = 4 equilateral triangles (e. t.) / 2 particles of fire = 2 × 4 e. t. = 1 particle of air = 8 e. t. / 1 particle of fire + 2 particles of air = 4 e. t. + 2 × 8 e. t. = 1 particle of water = 20 e. t. / 2 ½ particles of fire = 2 ½ × 8 e. t. = 1 particle of water = 20 e. t. Furthermore, each primary body can be found in different grades of size (57c–d).

79 Although void is excluded, small interstices (58b5: *diakena*) exist between the different microscopic particles of elements of different sizes. Furthermore, small interstices must exist not only *because* the solids do not tessellate but also *when* during transmutation the 'atoms' come apart into their component triangles.

80 Cornford (1937), 213).

81 O'Meara (2017, 75).

82 Timaeus also affirms that justifying the choice of the two kinds of triangles would take too much time (54b1: *dioti de, logos pleiōn*) and that, beyond these two triangles, some principles yet more remote (*tas archas anōthen*) can be found, which are known to the God and to such men that are friends of the God (53d4–7). What are these ultimate principles? Lines? Points? Numbers? The One? For an overview of the different possibilities, see Karfík (2007, 149 n. 138).

appears to be fundamental. Of course, the importance of geometrical images (510b8: *eikōn*) in reaching knowledge of the Forms was clearly highlighted in the *Republic* (511c6–d6).[83] However, in the case of Timaeus' speech, the use of geometrical and stereometrical representations does not aim to reach knowledge of the model, but complements the a priori, deductive process of discovering the universe's properties and, by doing so, contributes to the grasping of the universe in its macro- and microcosmic dimensions and, more decisively, the way in which these dimensions are integrated with one another.[84] In other words, it could be suggested that the demiurgic point of view allows us to construct a prototype of the universe inside our minds. A partial example of such a prototype (focused on astronomical questions) is alluded to at 40d2, when Timaeus claims that due to the complexity of the celestial motions, a visible representation (*mimēma*)[85] would be necessary to reach complete knowledge. In the case of the universe, the ultimate prototype would not only involve the description of the planetary motions but also a complete visual representation of the universe in all its details.[86] The demiurgic point of view allows us to try, as far as we are humanly capable, to produce a living representation and, as Socrates wished with regard to the ideal city he described at the beginning of the dialogue, an *image*[87]*in motion* of the universe.

83 The nature of mathematical objects is a much-debated question, which depends on the interpretation of the analogy of the line (an analysis which Socrates himself treats with much caution in *Republic* 533e7–534b2) and the status of the World Soul described by Timaeus (34a–36b) as being a mathematized intermediary between the sensible and the intelligible. For a defense of the intermediary level of mathematical objects identified (as by Xenocrates) with the World Soul's blending, see Karfík (2007, section V).

84 With regard to the importance of visualization in all deductive reasonings that involve geometrical content, Giaquinto (2007, 76), commenting on the *Meno* slave example, writes, "while the experience of visualizing is similar to the experience of seeing, the epistemic role of visualizing can be utterly different from the primary, evidence-providing role of seeing [...]. So the fundamental mistake here is to assume that the epistemic role of visual experience, whether of sight or imagination, must be to provide evidence. In view of its non-evidential role we can say that visualizing [...] is part of an a priori means of [...] discovery."

85 This seems to be an allusion to an armillary sphere.

86 Another example, though partial (since it does not allow us to see the microscopical details of the universe), of that might be found in the Bardesanes representation of the universe *paradeigma*. See O'Meara (2017, 42–43).

87 At *Statesman* 285d9–286a4, the Stanger claims that perceptible representations (*aisthētai tines homoiotētes*) can be used to give explanation without complication. However, no such representation can be found for incorporeal entities (*asōmata*). There is no consensus as to whether these realities are intelligible Forms. This passage has been interpreted in various ways (see Owen (1973); Brisson and Pradeau (2011, 243–44 n. 217); Dixsaut et al. (2018, 436–41). What is important for us is that no concrete, visual representation (outside

3.4 A Demiurge, What For?

If the Demiurge is a point of view that allows us to visualize the universe, then three difficulties seem to arise: (i) what should we make of the fact that the Demiurge is causally responsible for the World Soul? (ii) how should we interpret the Demiurge's geometrization of the traces of the elements? and (iii) what is the function of the young gods, who seem to take over the demiurgic work? These three questions, which all deal with the Demiurge's putative ontological role, can be answered if we admit that the function of the Demiurge is fundamentally epistemological. At 35a–b, Timaeus describes how the Demiurge constitutes the World Soul composite as an intermediary mixture between (intelligible and sensible) being, sameness, and difference. This mixture is first divided (into intervals) and then unified (the intervals are filled) with the use of three mathematical proportions (35b–36b). Finally, the intermediary mathematized blending acquires a third dimension by taking the form of two interconnected circles (the same and the different), which are described as the causes of the motions of celestial bodies in the universe (36b–e) and possess the ability to access both intelligible and sensible objects (36e–37c). The World Soul, which is said to be invisible (36e6: *aoratos*), is characterized as a (circular) self-moving motion (37b5: *en tōi kinoumenōi hyph'hautou*).[88] Strangely enough, the Demiurge *gives* its uniform circular motion to the World Soul (36c2–3). Must we really admit that the Demiurge is the cause of the motion of the soul? This could be interpreted, as some scholars argue,[89] as pointing out the ontological dependence of the soul on the Demiurge. Thus, if the World Soul ontologically depends on the Demiurge, then we have apparently identified a proper function for the Demiurge. However, the only dependence that can be found in the text is the one of the body on the soul. The soul is indeed older (34c2: *presbyteron*) than the body, that is *prior* (*proteros*) *to body and more venerable in birth and excellence* (*genesei kai aretēi*) (34c3–4). Now the fact that the soul has been created is a necessary consequence of the kind of discourse adopted, but it should not imply an ontological dependence on the Demiurge. If the divine craftsman represents a point of entry into understanding the complexity of the universe, and more specifically into grasping matters that cannot be empirically verified, then it makes perfect sense that, through

our minds) of the cosmos is possible, due to the high degree of complexity induced by it being an image of an intelligible model.

88 See *Phdr.* 245e7–246a1, *Laws* 895e10–896a2, 896b3.

89 According to Brisson ([1974]), the soul is temporally ungenerated (as stated at *Phdr.* 245d1: *agenēton*) but ontologically dependent on the Demiurge.

the process of fabricating the World Soul, we come to better understand the nature of the cause of ordered motions in the universe, a cause described as an intermediary between the sensible and the intelligible. The constitution of the World Soul is part of Timaeus' great experiment: by re-enacting its fabrication, we can try to understand its nature and functions. The perspective on the World Soul's constitution exemplifies the two dimensions of Timaeus' thought experiment: an external point of view and the description (the soul envelops the heaven all round on the outside [36e2]) of invisible components (the three ingredients being divided and unified) of the soul (which is itself invisible).

Why, then, assign a specific ontological function to the Demiurge with regard to the World Soul? Not only does its nature not appear to depend on anything other than its position between the intelligible and the sensible, but neither do its two functions (self-moving and cognitive). To be sure, the World Soul can contemplate the intelligible model (36e5–37c5) and then, via the regular planetary motions, be the cause of ordered cosmic life. Apparently, there is no need for a supplementary, separated Intellect. Of course, the World Soul's causality could certainly be associated with a full range of phenomena taking place in the universe (growing processes, change, destruction…) and it certainly is possible to identify it with demiurgic activity. In other words, would the efficient causality of the World Soul be sufficient in terms of bestowing the intelligibility of the model on the universe? When Timaeus interrupts his speech in order to introduce the role played by Necessity in the universe, he makes a distinction between proper causes (46d2: *aitiai*) and auxiliary causes (46d1: *synaitiai*). The first ones are rational causes (46d8: *tas tēs emphronos physeōs aitias*) always associated with Intellect (46e4: *meta nou*), whereas the second ones are deprived of reason (46e5: *monōtheisai phronēseōs*), producing their effects by chance and without order (46e5: *to tychon atakton*), by virtue of the action of necessity (46e1–2: *kata anankēs*). Within this distinction, demiurgic work must be associated with the first kind of cause as it produced beautiful and good effects (46e4: *kalōn kai agathōn dēmiourgoi*). It is noticeable that, according to this reasoning, the demiurgic cause is, a few lines later, identified with soul: "For we must declare that the only existing thing which properly possesses intelligence is soul."[90] This seems to be a more general affirmation than the one at 30b3, according to which, in sensible objects, Intellect must be found in a soul. Here, at 46d5–6, Timaeus appears to attribute *any* productive causality in the universe to the Intellect of the World Soul. Consequently, in the case of the World Soul's description, the Demiurge need not be anything

90 *Ti.* 46d5–6: τῶν γὰρ ὄντων ᾧ νοῦν μόνῳ κτᾶσθαι προσήκει, λεκτέον ψυχήν.

other than an *ontological-scope* through which we can "see" the nature and function of the soul.

The same line of thought can be defended in relation to participation. In Timaeus' speech, two aspects seem to be distinguished when it comes to describing participation. First, the traces of the four elements appear in the Receptacle and then theses traces are geometrized by the Demiurge with numbers and figures (that is, by giving them the shape of the two basic triangles). As traces, these pre-elements could either not yet be or no longer be images of the elements.[91] If it is true that, strictly speaking, these are traces "*of the elements*, not of the models of the elements,"[92] it nevertheless seems that setting pre-cosmic chaos just after the description of the four elements, which are called images (*mimēmata*) of the Forms of the four elements (especially at 52c), strongly suggests that the *traces* should be identified with the *images* of the Forms. These traces are said to be without proportion and measure (69b5), and when Timaeus returns to talk about them at 69b, he claims that they should not even be called by the names of the four elements (69b7). The distinction between a proto-participation (the reflection of the Forms in the Receptacle) and a higher degree of participation obtained by the action of demiurgic geometrization has led some scholars to associate the divine craftsman with a necessary cause of participation.[93] Another possibility, which I think more likely, consists in conceiving the Demiurge as, once again, an epistemological tool that allows us to "construct," inside our minds, the process of participation. To do so, it is necessary to visualize what the sensible would be without participation. If we suppress participation, what would the sensible be? It could not be nothing at all, since in that case we would have to admit that nothingness participates in Forms, which is impossible. A solution to this problem would be to artificially isolate a pre-cosmic state in need of participation. This counterfactual construction depicts the traces of the element appearing in the Receptacle.[94] Remember that traces can be either the result

91 For a suggestion that the term *ichnos* does not refer to the relation between a particular and a Form, see O'Meara (2017, 60–61). For an occurrence of this term in Plato, and the difference between the heuristic and causal aspects of a trace, see Harte (2002, 133 n. 6). For an interpretation of the traces in a literal approach, see chapter 4.3.2.4.

92 O'Meara (2017, 60).

93 For example, see Brisson ([1974], 401–5) and Karfík (2007, section IV and V), for whom the role of the Demiurge is (i) to look at the Forms; (ii) then to bestow their intelligibility on mathematical objects (which are identified with the World Soul mixture); and (iii) to use them as an intermediary model in order to geometrize the traces of the elements.

94 As it seems, the introduction of the Receptacle (which is related either to space, matter, or both) is also part of the great experiment, since it allows a visualization of the

of a previous participation or the anticipation of a participation yet to come. This second alternative is the correct one: in order to understand what participation is, Timaeus isolates a pre-participation state of affairs and describes a progressive process of participation (the geometrization of the traces) which is, in reality, constantly occurring in the universe. At the end, participation, for sensible objects, equals their direct relation to different Forms, and the presence of these Forms in them must be understood in terms of a mathematical structure.[95] The demiurgic point of view allows us to experiment what this participation *in motion* is.

Finally, we should address the question of the young gods. The Demiurge is responsible for the constitution of the divine species as well as the immortal part (the *nous*) of the soul of living beings, made from the same mixture (albeit slightly less pure) as the World Soul. The divine species is composed of the invisible (the traditional gods briefly evocated in 40d–41a) and visible gods (the planets and the fixed stars). The visible gods, which are smaller reproductions of the universe, are composed of spherical bodies joined with immortal souls. A spherical shape is assigned to them so that they can imitate the shape of the cosmos (40a4: *panti proseikazōn*). Their body is made from the four elements, mainly out of fire (40a3: *ek pyros*), and their soul is responsible for their own rotative motion (they also participate in the motions of the World Soul's two circles), as well as their ability to constantly think the same things about the same things (40a8–b1: *peri tōn autōn aei ta auta heautōi dianooumenōi*). As the members of the divine species are imitations of the universe, they are also eternal (although, in theory, they could be dissolved by the Demiurge, they are in fact non-dissolvable [*alytos*]). As a matter of fact, since the Demiurge is good and wishes to realize the best possible work, all that he produces will be unified by the best possible bonds. Nonetheless, the three remaining mortal species must be fashioned for the universe to be complete and they must consequently

milieu in which every three-dimensional entity must be situated. To help us visualize the Receptacle (*hypodochē*: 49a6, 51a5), Timaeus introduces images: it is like a mother (*mētēr*: 50d3), a nurse (*trophos*: 88d6, *tithēnē*: 49a6, 52d5, 88d6), and a place (*chōra*: 52a8, 52b4, 52d3, 56a6, *topos*: 52a6, 52b4, 57c3, *edra*: 52b1, 53a6). It is described in ways that might make us think of it as space *and* matter (Timaeus uses the metaphor of gold [50a5–b5], an impress or mold [50c2–3], and an odorless base of perfumed ointments [50e8–51a1]). See Harte (2002, 247–64).

95 This does not need to be limited to the Forms of the four elements. Every participation (in Beauty, in Justice, in Humanity, etc.) could be reduced to the acquisition of a mathematical structure, which, in turn, must be understood in terms of taking part in Identity (equality) and Difference (inequality). For such an interpretation, see O'Meara (2017, 75–79).

be constituted by *someone else* other than the Demiurge. The only possible candidates are the (visible and invisible) gods. The Demiurge does not only delegate an important part of his work (fashioning *all the members* of all three remaining species) to the young gods, but also gives them instructions about how to do their work (41a–d). In his speech to them, the Demiurge declares that (i) they will not be dissolved nor taste death, "finding my will a bond yet stronger and more sovereign than those wherewith you were bound together when you came to be,"[96] and (ii) they should undertake their artisanal work by imitating his power (41c5*: mimoumenoi tēn emēn dynamin*). After giving his orders, the Demiurge asks the young gods to do their work and "continue to abide by the wont of his own nature" (42e5–6*: en tōi heautou kata tropon ēthei*).[97]

Must we really believe that an important part of the fabrication of the universe is undertaken by created gods? In that case, there would be two irreducible levels of craftsmanship that should be distinguished. Yet is it not strange to suppose that the members of the other three species have been fashioned by the first one? Does it make sense to suppose that Jupiter and Mars, for example, have fabricated the fish and the cows? This idea probably has to be dealt with (as we know from *Republic* 509b*,* the sun is indeed responsible for life on earth) because the visible gods, being associated with the motions of the World Soul, certainly have a role to play in maintaining the life of the other species. However, their productive role must be understood as an inferior one in relation to the Demiurge, as they imitate divine craftsmanship. They are in the same position with regard to the intelligible as the imitative artists are at *Republic* 595c–602b, one step further away from real being than proper craftsmen. They imitate an imitation of the intelligible: as we have seen, bestowing the nature of the intelligible requires a complex process of deductions and visualizations (the Demiurge's reasoning leads him to choose the spherical shape as an imitation of intelligibility, and geometrical proportion as the most unifying bond [*desmos*] between the four elements), whereas the young gods' work is rather *more pragmatic*: they imitate what the Demiurge has already done (they opt for the same spherical shape for living beings, that is, the shape of their heads, to which the rest of their body will be added as a useful tool for interacting with and moving in the universe, and as *desmoi* between the elemental constituents of the living bodies, not indissoluble bonds, but "tightly uniting them with a multitude of bolts too small to be seen" [43a3: *dia*

96 *Ti.* 41b4–5: τῆς ἐμῆς βουλήσεως μείζονος ἔτι δεσμοῦ καὶ κυριωτέρου λαχόντες ἐκείνων οἷς ὅτ' ἐγίγνεσθε συνεδεῖσθε.

97 On the different interpretations of this sentence, see chapter 4.3.2.3.

smikrotēta aoratois pyknois gomphois syntēkontes]). In fact, all work performed by the young gods is aimed at suggesting how the remaining constituents of the universe are teleologically organized and, in this way, it is more concerned with biological and physiological considerations than metaphysical ones.[98] In short, whereas the Demiurge's perspective is properly, as we have defined it, that of a thought experiment, the young gods' point of view embodies an account of Timaeus' empirical knowledge of living beings, and is not, for that matter, part of the demiurgic thought experiment.

If we come back to the question of the function of the Demiurge, a last objection must be raised. In his own discourse, the Demiurge himself seems to suggest that beyond the bonds found between the constituents of the universe (as the geometrical proportion for the four elements), we must suppose, as every bond can in theory be dissolved by the one that has established it, the existence of a *stronger and more sovereign bond*, the Demiurge's *boulesis*. Apparently, two levels of bonds exist in the universe, and one, the Demiurge's wish, cannot be reduced to the bonds of mathematical proportion found within the universe's structure. If this is the case, then it seems that the Demiurge should not be considered as a mere perspective but must indeed play an ontological role. Nevertheless, as stated in the *Phaedo*, the divine bond is "the good and 'binding' that truly binds and holds together" (99bc5–6: *hōs alēthōs to agathon kai deon syndein kai synechein*).[99] In other words, the Demiurge not only embodies a perspective about the nature of the universe, but also a specific point of view, which offers a contemplation of the universe as the best possible ordered whole. The Demiurge represents, I think, a specific perspective unveiling to us *the good* in the universe and, in that sense, he can be said to be the most excellent of intelligible and eternal things (37a1: *tōn noētōn aei ontōn*). To be sure, the divine craftsman is not the Form of the Good, but the macro- and microscope that allow us to understand and visualize the beauty and the goodness of the universe. In other words, the Demiurge chooses the best possible configuration of the universe. However, this optimal arrangement of the order

98 It can be objected that the young gods could be seen as sub-demiurges who are extensions of the Demiurgic point of view. That would imply that the *Timaeus'* thought experiment should also include the constitution of the mortals and their parts. However, as i) the young gods appear to imitate the work of the Demiurge (41c5) and not the Intelligible Model itself and ii) the results of their productive efforts are limited by empirical data and cannot be the subject of imaginative variations, it seems then more cautious to leave the young gods' constitutive work outside of the mental model Timaeus is offering us. Yet, it could also be argued that, for this model to be the best possible, it should include a complete arrangement of every argument introduced in Timaeus' speech.

99 On this passage, see El Murr (2021, 46–49).

of things does not have to be the actual result of the work of a divine will. It could as well be a characteristic of the universe, which the reader is led to conceive by putting himself in the place of the Demiurge and by experimenting in his mind, like a god, the making of the whole. Should we really assume, beyond the optimal order of things, a principle different from the Good itself? Does the indissolubility of the universe ontologically depend on the will of the Demiurge, or perhaps, more simply, on the contemplation, by the World Soul, of the intelligible Model and, more specifically of the Form of the Good?[100] The Demiurge is then an epistemological point of view, transforming Timaeus' speech into a thought experiment that combines argumentation and visualization. It also satisfies the three criteria highlighted at the beginning of this chapter: Timaeus' speech offers a counterfactual fiction (1), which, because of the necessary visualization process involved for some aspects of the universe, could not be converted into a mere deductive and non-deductive argumentation (2), which leads us (in fact, some of us: the friends of the God) to new pieces of knowledge on the nature of the universe (3). If so, one could ask if there is a need to attach the ontological function of a separated *nous* to the Demiurge. At the end, it all depends on the following question: are the Model, the Receptacle and the World Soul sufficient to give a coherent account of Plato's universe? The universe is ordered by the World Soul as its Intellect contemplates the intelligible Model and the Good. Consequently, the World Soul is responsible for the moving structural order of the cosmos. If the mains function of the Demiurge is to allow us to comprehend why and how the universe possesses the best possible configuration, then the necessity to assume another demiurgic function may fade away. The Demiurge, to whom we shall finally *not* say goodbye, is Plato's device for making it possible for us to contemplate the whole complexity of the moving image that is our cosmos.[101]

100 This interpretation does not imply that Plato and Aristotle's cosmology would collapse. Even if Plato's Good and Aristotle's Prime Mover could be identified, Timaeus' separation between intellect and necessity in general, and the status of the pre-cosmic chaos in particular suggest different views from the ones defended by Aristotle. As for the teleological dimension, even if the Demiurge is indeed understood as an epistemological tool, the *translation* of the Model's intelligibility in the universe needs a cause, which is, most probably, the World Soul (See 46d5-6).

101 This chapter contains some of the arguments I defend in more details in my habilitation thesis: "Ordre et désordre dans l'univers. Un essai sur l'expérience de pensée du *Timée*" (Fribourg, 2021). I would like to express my gratitude to the editors of this volume, Daniel Vázquez and Alberto Ross, for their great work. I also want to thank the two anonymous referees from Brill for their very useful comments.

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CHAPTER 4

Before the Creation of Time in Plato's *Timaeus*

Daniel Vázquez

4.1 A Puzzle in Timaeus' Cosmogony

In the *Timaeus,* Plato offers a detailed account of the beginning of the cosmos. In this account, a god creates an ordered, living, and intelligent cosmos by looking at a perfect model. Unlike the Christian god, who creates out of nothing,[1] the god in the *Timaeus* creates from a pre-existing receptacle and some traces of fire, water, air, and earth, which move in a disorderly fashion (*Timaeus* 30a2–6; 52d2–53b7; 69a6–c5). Along with the cosmos, the god also creates time:

> Now when the Father who had begotten the universe observed it set in motion and alive, a thing that had come to be as a shrine for the everlasting gods, he was well pleased, and in his delight he thought of making it more like its model still. So, as the model was itself an everlasting Living Thing, he set himself to bringing this universe to completion in such a way that it, too, would have that character to the extent that was possible. Now it was the Living Thing's nature to be eternal, but it isn't possible to bestow eternity fully upon anything that is begotten (*gennētos*). And so he began to think of creating[2] a moving image of eternity: at the same time as he brought order to the universe, he would create an eternal image, moving according to number, of eternity remaining in unity. This number, of course, is what we now call 'time'.
>
> *Timaeus* 37c6–d7[3]

1 For the doctrine of *creatio ex nihilo* (creation out of nothing), its history, biblical support, and Christian and Jewish proponents, see Erasmus (2018) and Anderson and Bockmuehl (2018).

2 Plato uses the verb *poieō*, "to produce," "to make" or "to create" (out of something).

3 Unless otherwise stated, translations are by Zeyl (2000) with minor modifications. The Greek reads: Ὡς δὲ κινηθὲν αὐτὸ καὶ ζῶν ἐνόησεν τῶν ἀιδίων θεῶν γεγονὸς ἄγαλμα ὁ γεννήσας πατήρ, ἠγάσθη τε καὶ εὐφρανθεὶς ἔτι δὴ μᾶλλον ὅμοιον πρὸς τὸ παράδειγμα ἐπενόησεν ἀπεργάσασθαι. καθάπερ οὖν αὐτὸ τυγχάνει ζῷον ἀίδιον ὄν, καὶ τόδε τὸ πᾶν οὕτως εἰς δύναμιν ἐπεχείρησε τοιοῦτον ἀποτελεῖν. ἡ μὲν οὖν τοῦ ζῴου φύσις ἐτύγχανεν οὖσα αἰώνιος, καὶ τοῦτο μὲν δὴ τῷ γεννητῷ παντελῶς προσάπτειν οὐκ ἦν δυνατόν· εἰκὼ δ᾽ ἐπενόει κινητόν τινα αἰῶνος ποιῆσαι, καὶ διακοσμῶν ἅμα οὐρανὸν ποιεῖ μένοντος αἰῶνος ἐν ἑνὶ κατ᾽ ἀριθμὸν ἰοῦσαν αἰώνιον εἰκόνα, τοῦτον ὃν δὴ χρόνον ὠνομάκαμεν.

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Despite what Plato writes in this passage, the *Timaeus* contains numerous references to the state of affairs *before* the creation of time.[4] This gives rise to a famous puzzle: the creation of time seems inconsistent with the description of events that happened *before* its creation. Could something happen before time was created? Could time be created at all? What is the most charitable way to read the text?

Plato scholars react to this puzzle in two ways. Some (a) defend the consistency of the *Timaeus*' account, whereas others (b) acknowledge the inconsistency but minimize its importance. There are different ways to defend the first alternative. Many believe, for example, that the cosmogony (a1) is just a metaphor. They see no inconsistency because the creation of the cosmos and time is a metaphor that stands for relations of ontological dependence, not events in an actual timeline.[5]

Other scholars (a2) read the cosmogony as a literal and consistent description of facts but argue that the creation of time refers only to "cosmic time," a time inextricably linked to counting and measuring the regular movements of the celestial bodies. Obviously, before the creation of the celestial bodies and its movement, there is no cosmic time. But there is an implicit "pre-cosmic time," uncreated and unmeasurable. When Plato refers to events before the creation of time, he means things that happened before the celestial bodies were created; a time before people could count days or years.[6]

A more recent proposal understands the cosmogony as (a3) a counterfactual scenario. Here the description of a pre-cosmic stage of the universe is meant literally, but only as a thought experiment of what things would look like if we could—*per impossibile*—subtract god's actions from the picture.[7] If the god were not permanently sustaining the cosmic order, then there would

4 See *Ti.* 53a2–b5, 52d2–53b7, 69a6–c5.

5 Modern advocates of this reading are, among others, Taylor (1928), Cornford (1935), Cherniss (1944), Tarán (1971), Brisson (1998), and Fronterotta (2003).

6 The modern champion of this view is Vlastos (1939, 1964), but see also Hackforth (1959), Guthrie (1978, 300–304), and Mohr (1985). The dispute between a literal and a metaphorical reading goes back to Plato's immediate successors. See Aristotle, *Ph.* 251b17 and *Cael.* 279b33–280a2. For more on this and the ancient discussion, see chapter 2 in this volume and footnote 11, below.

7 Let me be clear about the difference between a metaphorical and counterfactual reading. In a metaphorical reading, temporal terms stand in for ontological relations of dependency. In contrast, in a counterfactual reading, temporal terms are read literally. The description of the pre-cosmos is what would literally happen if only we could subtract god's action.

be only a huge cosmic mess. Since the pre-cosmos and the cosmogony are not factual, the account's consistency is preserved.[8]

Alternatively, some acknowledge that there is inconsistency in Timaeus' cosmogony but downplay its importance (b1).[9] We find some support for this last view at *Timaeus* 29c4–d3, where Timaeus warns us that some inconsistencies in his account are unavoidable:

> Don't be surprised then, Socrates, if it turns out repeatedly that we won't be able to produce accounts on a great many subjects—on gods or the coming to be of the universe—that are completely and perfectly consistent and accurate. Instead, if we can come up with accounts no less likely than any, we ought to be content, keeping in mind that both I, the speaker, and you, the judges, are only human. So, we should accept the likely tale on these matters. It behooves us not to look for anything beyond this.[10]

Each of these alternatives has serious consequences for our reading of Timaeus' cosmology. The decision determines, for example, whether the cosmos has always existed or had a punctual beginning. If the cosmogony is a metaphor or a counterfactual scenario, then the cosmos has always existed. Otherwise, it had a beginning. Our interpretation of the cosmogony also affects the way we conceive of divine causation. If it is a description of facts, then the god is an active agent that produces the cosmos. But if the cosmogony is a counterfactual, the god could instead be a continuous, sustaining cause. If we assume the creation is metaphorical, the causation at play could be only formal. Ultimately, the very nature of time is at stake. Depending on our reading, either time is everlasting and without limits at both ends, or it has a beginning and is unlimited only toward the future.[11]

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8 The clearest advocates of this proposal are Carone 2004 and chapter 3 in this volume. See also Burnyeat 2005, 163. Brisson and Fronterotta sometimes refer to the cosmogony as some sort of thought experiment, even if they endorse a metaphorical reading of the *Timaeus* at a more general level. See Brisson 1998, 297 and Fronterotta 2010. For discussion and a different alternative, see Johansen 2004, 89–91.

9 See, for example, Sedley 2007, 98–110.

10 ἐὰν οὖν, ὦ Σώκρατες, πολλὰ πολλῶν πέρι, θεῶν καὶ τῆς τοῦ παντὸς γενέσεως, μὴ δυνατοὶ γιγνώμεθα πάντῃ πάντως αὐτοὺς ἑαυτοῖς ὁμολογουμένους λόγους καὶ ἀπηκριβωμένους ἀποδοῦναι, μὴ θαυμάσῃς· ἀλλ' ἐὰν ἄρα μηδενὸς ἧττον παρεχώμεθα εἰκότας, ἀγαπᾶν χρή, μεμνημένους ὡς ὁ λέγων ἐγὼ ὑμεῖς τε οἱ κριταὶ φύσιν ἀνθρωπίνην ἔχομεν, ὥστε περὶ τούτων τὸν εἰκότα μῦθον ἀποδεχομένους πρέπει τούτου μηδὲν ἔτι πέρα ζητεῖν.

11 For even more replies to this puzzle, see Sorabji (1988, ch. 17) and Baltes (1996). In antiquity, Aristotle, Plutarch, Atticus, the Epicureans and probably Polemo, Antiochus, Cicero, Severus, Harpocriton, and other Platonists read the cosmogony in a literal way; see Sedley

In this chapter, I defend reading Timaeus' creation of the cosmos and time as a consistent, literal, and factual account (i.e., a new [a2] reading).[12] To this end, I shall answer the main objections scholars raise against this type of reading. However, instead of assuming or positing some sort of pre-cosmic time, like previous (a2) readings, I argue that in the *Timaeus*, Plato puts a lot of effort into showing that time presupposes but is not identified with a mere succession of events (i.e., an unbounded sequence where events can be placed in before, after, and simultaneous relations).

My main purpose, however, is not to persuade everybody that my reading of the text is the correct one—after all, scholars tend to be stubborn on this issue. But I do wish to clarify the assumptions under which it becomes a sensible and fruitful interpretation. In what follows, I will first assess the state of the debate and the most common objections to the traditional interpretations. Then, I will discuss some of my exegetical principles and articulate my reading of the Timaean cosmogony and time. Finally, I will evaluate whether my reading delivers on what I have promised.

4.2 Assessment of the Contemporary Debate

Scholars have offered strong objections to both a metaphorical cosmogony (i.e., a1) and the possibility of a consistent and factual creation (i.e., a2). The main problem with the first one is that—despite its illustrious pedigree and widespread acceptance—some passages seem to rule it out. For example, scholars often quote *Timaeus* 28b2–c5 as evidence against a metaphorical reading:

(2007, 107). The Stoics also seem to have developed their cosmology from a literal reading of Plato. See Sedley 2002. However, the metaphorical interpretation was the most widespread reading of the text in the Academy and Neoplatonic circles. Supporters of this reading include Speusippus, Xenocrates, Crantor, and Proclus. See Guthrie (1978, 303) and Carone (2004, n. 2). Finally, in some passages, Simplicius seems to suggest that the cosmogony is a counterfactual. See *In Cael.* 303.34–304.12.

12 Notice that a description of facts does not need to be perfectly accurate. It is committed to the existence of certain facts, but as a description, it only needs to be appropriate or reasonable given the available evidence, human limitations, or its announced purpose. For example, if a worker narrates an incident that happened at work, she might not get all the details right, but as far as she presents it as an incident, she commits herself to its factuality. She is claiming that what she describes really happened, even if there are some holes in her account. In that sense, a factual interpretation is compatible with the status of the speech as an *eikōs mythos*. For more on this, see footnote 22 below; for discussion, see chapters 2 and 3 in this volume.

> Now as to the whole universe or world order [*kosmos*]—let's just call it by whatever name is most acceptable in a given context—there is a question we need to consider first. This is the sort of question one should begin with in inquiring into any subject. Has it always existed? Was there no origin from which it came to be? Or did it come to be and take its start from some origin? It has come to be. For it is both visible and tangible and it has a body—and all things of that kind are perceptible. And, as we have shown,[13] perceptible things are grasped by opinion, which involves sense perception. As such, they are things that come to be, things that are begotten. Further, we maintain that, necessarily, that which comes to be must come to be by the agency of some cause. Now to find the maker and father of this universe [*to pan*] is hard enough, and even if I succeeded, to declare him to everyone is impossible.[14]

In this passage, Timaeus seems to clearly state that the cosmos had a beginning. Scholars point out, for example, the contrast between what "always existed" and the cosmos' status as something that "has come to be" (see also *Timaeus* 27c4–5), and the need of the agency of some cause to bring the cosmos into existence.[15]

Scholars also raise strong objections against reading the cosmogony as a consistent description of facts (i.e., a2). Four objections stand out. The first one argues that (i) the text rules out a "pre-cosmic time" (see *Timaeus* 37e4–38a8). A second objection contends that (ii) a factual cosmogony is incompatible

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13 See *Ti.* 27d5–28a4.

14 ὁ δὴ πᾶς οὐρανὸς—ἢ κόσμος ἢ καὶ ἄλλο ὅτι ποτὲ ὀνομαζόμενος μάλιστ᾽ ἂν δέχοιτο, τοῦθ᾽ ἡμῖν ὠνομάσθω—σκεπτέον δ᾽ οὖν περὶ αὐτοῦ πρῶτον, ὅπερ ὑπόκειται περὶ παντὸς ἐν ἀρχῇ δεῖν σκοπεῖν, πότερον ἦν ἀεί, γενέσεως ἀρχὴν ἔχων οὐδεμίαν, ἢ γέγονεν, ἀπ᾽ ἀρχῆς τινος ἀρξάμενος. γέγονεν· ὁρατὸς γὰρ ἁπτός τέ ἐστιν καὶ σῶμα ἔχων, πάντα δὲ τὰ τοιαῦτα αἰσθητά, τὰ δ᾽ αἰσθητά, δόξῃ περιληπτὰ μετ᾽ αἰσθήσεως, γιγνόμενα καὶ γεννητὰ ἐφάνη. τῷ δ᾽ αὖ γενομένῳ φαμὲν ὑπ᾽ αἰτίου τινὸς ἀνάγκην εἶναι γενέσθαι. τὸν μὲν οὖν ποιητὴν καὶ πατέρα τοῦδε τοῦ παντὸς εὑρεῖν τε ἔργον καὶ εὑρόντα εἰς πάντας ἀδύνατον λέγειν· One may worry that if the passage implies a punctual beginning, the argument does not work. It would illicitly conclude that the cosmos came to be from the fact that we can perceive becoming in the sense of constant change. But the contrast between γιγνόμενον καὶ ἀπολλύμενον ("comes to be and passes away") at *Ti.* 28a3 indicates that Timaeus refers here not only to constant change but also to the fact that perceptible things come to be and pass away. This is also emphasized by γιγνόμενα καὶ γεννητὰ at *Ti.* 28c1–2.

15 Many of the difficulties with the metaphorical reading were already found in Alexander of Aphrodisias (ap. Philoponus, *De aet. mundi* 214, 10–20; 215, 4216, 6; and Simpl., *In Cael.* 297.26–298.16). See Sorabji 1988, 275. For other strong objections against the metaphorical reading see Vlastos 1939, 1964; Skemp 1942, 111; Hackforth 1959; Sorabji 1988, ch. 17; Johansen 2004, 48–68; Sedley 2007, 98–110.

with the immutable relation the god maintains with the world (see *Timaeus* 42e5–6; see also *Republic* 381c1–10). Some people also point out that (iii) this interpretation contradicts important Platonic doctrines found elsewhere. For example, the claims that souls are not generated and are the cause of all motion (*Phaedrus* 245c5–246a2; *Laws* x, 892a1–b2), or that generation and destruction are a pair that go hand in hand (*Republic* 546a2). Finally, some worry that (iv) a literal cosmogony cannot say why the world was created at the specific moment it was created and not sooner or later.[16]

Although many people still assume or support these two interpretations (a1 or a2), the discussion is at a standstill. Scholars often rephrase the same objections and offer the same passages for choosing one interpretation over the other.[17] At this point, you might think that the two remaining options—understanding the cosmogony as a counterfactual scenario (a3) or concluding that the inconsistency is not so serious after all (b1)—become the most plausible solutions to our puzzle.

However, when it is closely scrutinized, I find serious difficulties with the suggestion that the cosmogony could be a counterfactual scenario (a3). I see three main reasons to reject it. The most obvious one is that the textual support is weak. The passage often mentioned as hinting at a counterfactual cosmogony is found in the description of the pre-cosmos at *Timaeus* 53a7–b5:

> Indeed, it is a fact that before this took place the four kinds all lacked proportion and measure, and at the time the ordering of the universe was undertaken, fire, water, earth and air initially possessed certain traces of what they are now. They were indeed in the condition one would expect

16 See Cicero, *Nat. D.* I 18–23 (LS13G); Carone 2004; Johansen 2004, 90. For other objections, see Tarán 1971; Baltes 1996; Dillon 1997.

17 One exception is Johansen (2004, 90–91) who—crediting Myles Burnyeat for the idea—offers a way to avoid both a metaphorical reading and most of the objections raised against reading the text as a consistent factual account. He suggests that the cosmogony is perpetually occurring as the world tends to chaos, and the god continuously intervenes to fix it. The pre-cosmos could be a disorder that either happens occasionally or is just potentially prior to the Demiurge's intervention. But just as in the metaphorical reading, this view struggles to explain the use of the perfect tense *gegonen* ("has come to be") at *Ti.* 28b7. If the creation of the cosmos is a recurrent or continuous event, why did Plato not use the imperfect instead of the perfect tense? The same objection applies to Carone (2004), who thinks that the perfect tense could cover the meaning of the imperfect. Moreover, *Ti.* 31b, 37d, and 38b6–c6 discard the possibility that the disorder occasionally happens *after* the cosmos has already come to be. If the pre-cosmos only occurs potentially but counterfactually, then Johansen's view collapses into (a3), in which case, see the objections above.

> for anything whenever (*hotan*) the god is absent from it. So, finding them in this natural condition, the first thing the god then did was to give them their distinctive shapes, using forms and numbers.[18]

The pre-cosmic state occurs whenever the god is absent from the things in the cosmos. Now, if one adds the thought that god would never abandon the world, since that would compromise his immutable relationship with it, then a counterfactual reading of this passage becomes more appealing. However, the text never really suggests that the pre-cosmos may not have happened. It indicates that it happened and could in principle happen again—although it would not. Moreover, *Critias* 106a3–4 seems to completely discard this possibility: "Now I offer my prayer to that god [i.e., the cosmos] who came to be long ago in reality, but who has just now been created in my words" [τῷ δὲ πρὶν μὲν πάλαι ποτ' ἔργῳ, νῦν δὲ λόγοις ἄρτι θεῷ γεγονότι προσεύχομαι].[19] More importantly, even if *Timaeus* 53a8–b4 allows a counterfactual reading of the cosmogony, it seems, then, that we should not only suppose that there is no cosmos but that there is no time either. *Timaeus* 53b3–4 suggests god's complete absence, and both time and the cosmos seem inextricably linked.[20] But if that is so, either the description of the pre-cosmos is metaphorical, or we have to assume there is some type of pre-cosmic time, which are prospects this kind of reading was supposedly trying to avoid. Finally, in the counterfactual interpretation of the cosmogony, the god seems to collapse into the World Soul. Although some scholars are ready to accept this consequence, it seems to rely on assuming an even more widely metaphorical reading of the *Timaeus*.

Should we then settle for the interpretation that accepts the inconsistency but minimizes its importance (b1)? One could still complain that even if Timaeus recognizes that inconsistencies will remain, claiming some things happen before the creation of time cannot be covered by this because it is not a minor slip. On the contrary, it is an inconsistency that threatens to collapse the whole cosmological account. Accepting this inconsistency makes the *Timaeus*' cosmology not a likely story but an impossible one. Thus, the real

18 καὶ τὸ μὲν δὴ πρὸ τούτου πάντα ταῦτ' εἶχεν ἀλόγως καὶ ἀμέτρως· ὅτε δ' ἐπεχειρεῖτο κοσμεῖσθαι τὸ πᾶν, πῦρ πρῶτον καὶ ὕδωρ καὶ γῆν καὶ ἀέρα, ἴχνη μὲν ἔχοντα, παντάπασί γε μὴν διακείμενα ὥσπερ εἰκὸς ἔχειν ἅπαν ὅταν ἀπῇ τινος θεός, οὕτω δὴ τότε πεφυκότα ταῦτα πρῶτον διεσχηματίσατο εἴδεσί τε καὶ ἀριθμοῖς.

19 Translated by Diskin Clay in Cooper and Hutchinson 1997. The authenticity of the *Critias* has recently been doubted by Rashed and Auffret (2017) but this has been thoroughly debunked by Tarrant (2019). For a different reading of this passage, see chapter 3.2 in this volume.

20 See *Ti.* 38b6–7, quoted below.

question is whether we can offer something better than biting the bullet and accepting the inconsistency.

4.3 Cosmogony without Inconsistency

In this section, I first explain the methodological considerations and assumptions that make my interpretation a plausible solution to the puzzle of the creation of time. Then, I offer my proposal and show how it avoids objections previous scholars have raised against similar interpretations.

4.3.1 *Methodology*

Some exegetical principles operate in the background of discussions about Timaeus' cosmogony. Interpretations often originate from different starting points and assumptions, and when these are not made explicit, the discussion gets muddled. To avoid this risk, let me briefly state five exegetical principles I presuppose in my interpretation. Some of them sound obvious and commonsensical but will become crucial to the resistance of certain objections and explain the appeal of a factual reading of the cosmogony.

My first exegetical principle is that (EP1) for any account, coherence implies and is better than consistency, which, in turn, is preferable to inconsistency.[21] Second, I think (EP2) that all things being equal, the more explanatory an interpretation, the better (i.e., if an interpretation leaves certain elements unexplained, that counts as a disadvantage). Furthermore, I assume (EP3) a literal reading of a text is preferable to a metaphorical one unless we find clear evidence of a frame setting the metaphor, or the literal meaning of the passage is unintelligible (internally and in conjunction with the rest of the text).[22] A fourth principle establishes the following hierarchy: (EP4) having textual evidence for *X* is preferable to simply inferring *X* from the main text. But inferences from the main text are preferable to referring to quotes from other texts. All this is better than providing missing premises that cannot be inferred but

21 I use "consistent account" to refer to an account without contradictions, whereas I use "coherent account" to mean a consistent account whose parts fit together to form a whole.

22 The status of Timaeus' speech has been widely discussed and I will not examine this issue here. However, it should suffice to say that the phrases *eikōs logos* and *eikōs mythos* are not clear evidence for a metaphorical reading. If I offer a likely or probable story of my long-forgotten childhood, I do not need to resort to metaphors. I can offer a literal account (I mean what I am saying) that aims to be factual (I am not embellishing anything nor taking any poetical license). For discussion see Johansen 2004, ch. 3; Burnyeat 2005; Betegh 2010.

are compatible with the textual evidence. That is better still than resorting to claims with no textual support that are incompatible, contradictory, or, worse, that require emending the main text on contentious philosophical grounds alone. Finally, I assume that (EP5) internal coherence and consistency of a text is more important than coherence and consistency between different texts from the same author (or with later interpreters), even when the latter is still desirable if allowed by the other exegetical principles.

According to this, whenever possible, we should prefer a literal, coherent reading, based on textual evidence and inferences directly deriving from it. Furthermore, we should give priority to the internal coherence of a text and the explanatory power of a given interpretation. Finally, the overall purpose is to uphold these principles together, avoiding as far as possible the fulfilment of one of them at the expense of another (e.g., achieving coherence by forcing a metaphorical reading that has not enough textual support).

4.3.2 *Defense of a Consistent and Factual Cosmogony*

4.3.2.1 Time Means Cosmic Time

I agree with previous defenses of a factual cosmogony (i.e., a2) regarding claims that in the *Timaeus*, *chronos* ("time") refers only to cosmic time. That is to say that time in the *Timaeus* is created, measurable, regular, dependent on recurring motion, and linked to the life and movement of the celestial bodies.[23] Consider for example *Timaeus* 37e1–38a8:

> For before the heavens came to be, there were no days or nights, no months or years. But now, at the same time as he framed the heavens, he devised their coming to be. These all are parts of time, and was and will be are forms of time that have come to be. Such notions we unthinkingly but incorrectly apply to everlasting being. For we say that it was and is and will be, but according to the true account only is is appropriately said of it. Was and will be are properly said about the becoming that passes in time, for these two are motions. But that which is always changeless and motionless cannot become either older or younger in the course of time—it neither ever became so, nor is it now such that it has become so, nor will it ever be so in the future. And all in all, none of the characteristics that becoming has bestowed upon the things that are borne about in the realm of perception are appropriate to it. These, rather, are forms

23 Or even identified with the movement of the planets, see *Ti.* 39c7–d1.

> of time that have come to be—time that imitates eternity and circles according to number.[24]

Before the creation of time, there were no measurable units of time (days, months, years). A little later, at *Timaeus* 38b6–c6, Timaeus explains that the planets are brought into being with the express purpose of producing time, setting limits and numbers to it:[25]

> Time, then, came to be together with the universe so that just as they were begotten together, they might also be undone together, should there ever be an undoing of them. And it came to be after the model of that which is sempiternal, so that it might be as much like its model as possible. For the model is something that has being for all eternity, while it, on the other hand, has been born (*gegonōs*), is, and shall be for all time, forevermore. Such was the reason, then, such the god's design for the coming to be of time, that he brought into being the Sun, the Moon and five other stars, for the begetting of time. These are called 'wanderers,' and they came to be in order to set limits to and stand guard over the numbers of time.[26]

Time—as understood by Timaeus—has come to be, could be stopped, and is produced by or is the circular and countable movements of the planets.[27] In other words, time here only means the countable movements of the celestial clock, which has been set into motion by the Demiurge. There is no evidence

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24 ἡμέρας γὰρ καὶ νύκτας καὶ μῆνας καὶ ἐνιαυτούς, οὐκ ὄντας πρὶν οὐρανὸν γενέσθαι, τότε ἅμα ἐκείνῳ συνισταμένῳ τὴν γένεσιν αὐτῶν μηχανᾶται· ταῦτα δὲ πάντα μέρη χρόνου, καὶ τό τ᾽ ἦν τό τ᾽ ἔσται χρόνου γεγονότα εἴδη, ἃ δὴ φέροντες λανθάνομεν ἐπὶ τὴν ἀίδιον οὐσίαν οὐκ ὀρθῶς. λέγομεν γὰρ δὴ ὡς ἦν ἔστιν τε καὶ ἔσται, τῇ δὲ τὸ ἔστιν μόνον κατὰ τὸν ἀληθῆ λόγον προσήκει, τὸ δὲ ἦν τό τ᾽ ἔσται περὶ τὴν ἐν χρόνῳ γένεσιν ἰοῦσαν πρέπει λέγεσθαι—κινήσεις γάρ ἐστον, τὸ δὲ ἀεὶ κατὰ ταὐτὰ ἔχον ἀκινήτως οὔτε πρεσβύτερον οὔτε νεώτερον προσήκει γίγνεσθαι διὰ χρόνου οὐδὲ γενέσθαι ποτὲ οὐδὲ γεγονέναι νῦν οὐδ᾽ εἰς αὖθις ἔσεσθαι, τὸ παράπαν τε οὐδὲν ὅσα γένεσις τοῖς ἐν αἰσθήσει φερομένοις προσῆψεν, ἀλλὰ χρόνου ταῦτα αἰῶνα μιμουμένου καὶ κατ᾽ ἀριθμὸν κυκλουμένου γέγονεν εἴδη.

25 See also *Ti.* 38e3–39a3.

26 Χρόνος δ᾽ οὖν μετ᾽ οὐρανοῦ γέγονεν, ἵνα ἅμα γεννηθέντες ἅμα καὶ λυθῶσιν, ἄν ποτε λύσις τις αὐτῶν γίγνηται, καὶ κατὰ τὸ παράδειγμα τῆς διαιωνίας φύσεως, ἵν᾽ ὡς ὁμοιότατος αὐτῷ κατὰ δύναμιν ᾖ· τὸ μὲν γὰρ δὴ παράδειγμα πάντα αἰῶνά ἐστιν ὄν, ὁ δ᾽ αὖ διὰ τέλους τὸν ἅπαντα χρόνον γεγονώς τε καὶ ὢν καὶ ἐσόμενος. ἐξ οὖν λόγου καὶ διανοίας θεοῦ τοιαύτης πρὸς χρόνου γένεσιν, ἵνα γεννηθῇ χρόνος, ἥλιος καὶ σελήνη καὶ πέντε ἄλλα ἄστρα, ἐπίκλην ἔχοντα πλανητά, εἰς διορισμὸν καὶ φυλακὴν ἀριθμῶν χρόνου γέγονεν·

27 For discussion regarding the ontological status of time in the *Timaeus*, see Cornford ([1935] 1997, 97–116), Mohr (1985, ch. 2; 1986), and chapter 5 in this volume.

to suggest that Timaeus understands time (i.e., *chronos*) as an absolute notion unrelated to planetary movements. Time in the *Timaeus* only means intra-cosmic, created time.[28]

4.3.2.2 Pre-Cosmos without Cosmic Time

If the previous point is correct, we can explain the pre-cosmic stage without cosmic time. The only features we need are the notions of before, after, simultaneity, and succession. Cosmic time presupposes all these features, of course, but they are independent of it. Consider the following case: imagine I find my son's room in a complete mess because he has been playing all day. I enter the room and I tell him that he has ten minutes to tidy up and that I am setting a timer. Now I can tell with precision at what time he put each toy in its place, I can measure how fast he is doing it, and so on. Yet, I can still meaningfully refer to the room's state before I set the clock and offer a broad account of what things looked like, even if I cannot place any of the events in a determinate time. Also notice that in the dialogue, Timaeus never claims that the god creates the basic temporal features required to make sense of the pre-cosmos. On the contrary, the cosmogony presupposes them as given.[29]

Some scholars resist this interpretation. Von Leyden (1964, 43), for example, thinks that the cosmogony does not imply time has a beginning because the god creates temporality as a whole, not the opening moment of the time series. This seems to be suggested, for instance, by 37e4, where Timaeus says that "was and will be are Forms of time that have come to be" [τό τ' ἦν τό τ' ἔσται χρόνου γεγονότα εἴδη].[30] However, and despite how attractive this reading might sound, the "creation" of temporality turns out either to be a metaphor or to presuppose a second timeline, in which case the objections against (a1) or (a2) would still apply, respectively. More importantly, the context of 37e4 makes it clear that Timaeus already presupposes the circular movement of the celestial bodies that allow counting and measuring. The text refers to kinds of time where events and things are stable enough to be measured and numerically determined. In the pre-cosmos this is not the case. The traces' instability and ephemeral ontological status make this impossible. Measurable, stable, identifiable tensed existence only occurs inside the created cosmos and inside

28 It is unclear, however, whether this applies to other Platonic dialogues. In the *Statesman* myth, for example, the god changes the direction of the rotation of the celestial bodies, and although this intervention reverses ageing and generation, does not seem to reverse time. For the *Statesman* myth, see chapter 1 in this volume.

29 See, for example, *prin* at *Ti.* 37e2, 52d4, 53a7; *tote* at *Ti.* 53a2; *pro* at *Ti.* 53a8.

30 For more on this passage, see chapter 5.3.

cosmic time. But it does not follow that all possible references to "before" are like this. This is confirmed just a couple of lines later at 38a1–2: "Was and will be are properly said about the becoming that passes *in time*, for these two are motions" [τὸ δὲ ἦν τό τ᾽ ἔσται περὶ τὴν ἐν χρόνῳ γένεσιν ἰοῦσαν πρέπει λέγεσθαι—κινήσεις γάρ ἐστον]. Furthermore, Timaeus is comparing the eternal existence of the paradigm with the created cosmos. The pre-cosmic stage is simply ignored in this passage.[31]

Another reason for thinking that the cosmogony presupposes the basic features of before, after, and simultaneity independent from cosmic time is that the pre-cosmos is not in absolute chaos. Its interactions are just non-progressive.[32] We can identify one type of movement (rectilinear), there is a like-to-like sorting principle, and there are traces that can be generally located and differentiated. A broad sequence of events can be described, even if the duration of these stages or events cannot be properly determined with temporal units (i.e., days, months, and years):[33]

> There are being, space, and becoming, three distinct things which existed even before the universe came to be. Now as the wetnurse of becoming turns watery and fiery and receives the character of earth and air, and as it acquires all the properties that come with these characters, it takes on a variety of visible aspects, but because it is filled with powers that are neither similar nor evenly balanced, no part of it is in balance. It sways irregularly in every direction as it is shaken by those things, and being set in motion it in turn shakes them. And as they are moved, they drift continually, some in one direction and others in others, separating from one another. They are winnowed out, as it were, like grain that is sifted by winnowing sieves or other such implements. They are carried off and settle down, the dense and heavy ones in one direction, and the rare and light ones to another place. That is how at that time the four kinds were being shaken by the receiver, which was itself agitating like a shaking machine, separating the kinds most unlike each other furthest apart and pushing those most like each other closest together into the same region. This, of course, explains how these different kinds came to occupy different

31 On this topic, see also Mohr 1985, 64–66.

32 See Gregory 2008, xliii–xlv.

33 This is the way I understand εἶχεν ἀλόγως καὶ ἀμέτρως at *Ti.* 53a8. The traces are "irrational" in the sense that they cannot be determined, like irrational numbers.

> regions of space, even before the universe was set in order and constituted from them at its coming to be.
>
> *Timaeus* 52d3–53a7[34]

The events in the pre-cosmos can be ordered according to before, after, and simultaneity without implying they could be counted or measured, or that there is any recurring regular motion or celestial body. All these things, however, are essential features of time as described by Timaeus. In other words, in Timaeus' account, time presupposes but cannot be identified with the features derived from a simple succession of events.[35] There is no need to assume that succession of events is another type of time or a pre-cosmic time. What the text suggests is that without number, regular movement, and celestial bodies, a succession of events and the basic features this implies (before, after, simultaneity)—which are fundamental—are not what people call time.

Confusion arises if we start from the presupposition that time in the *Timaeus* is an absolute notion, independent from events. But that is to impose a Newtonian conception of time on a text that repeatedly insists this is not the case. Think about it in this way. When we find any temporal notion in a narrative, we immediately tend to assume it happens in time. But the *Timaeus*

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34 ὄν τε καὶ χώραν καὶ γένεσιν εἶναι, τρία τριχῇ, καὶ πρὶν οὐρανὸν γενέσθαι· τὴν δὲ δὴ γενέσεως τιθήνην ὑγραινομένην καὶ πυρουμένην καὶ τὰς γῆς τε καὶ ἀέρος μορφὰς δεχομένην, καὶ ὅσα ἄλλα τούτοις πάθη συνέπεται πάσχουσαν, παντοδαπὴν μὲν ἰδεῖν φαίνεσθαι, διὰ δὲ τὸ μήθ' ὁμοίων δυνάμεων μήτε ἰσορρόπων ἐμπίμπλασθαι κατ'οὐδὲν αὐτῆς ἰσορροπεῖν, ἀλλ' ἀνωμάλως πάντῃ ταλαντουμένην σείεσθαι μὲν ὑπ' ἐκείνων αὐτήν, κινουμένην δ' αὖ πάλιν ἐκεῖνα σείειν· τὰ δὲ κινούμενα ἄλλα ἄλλοσε ἀεὶ φέρεσθαι διακρινόμενα, ὥσπερ τὰ ὑπὸ τῶν πλοκάνων τε καὶ ὀργάνων τῶν περὶ τὴν τοῦ σίτου κάθαρσιν σειόμενα καὶ ἀνικμώμενα τὰ μὲν πυκνὰ καὶ βαρέα ἄλλῃ, τὰ δὲ μανὰ καὶ κοῦφα εἰς ἑτέραν ἵζει φερόμενα ἕδραν· τότε οὕτω τὰ τέτταρα γένη σειόμενα ὑπὸ τῆς δεξαμενῆς, κινουμένης αὐτῆς οἷον ὀργάνου σεισμὸν παρέχοντος, τὰ μὲν ἀνομοιότατα πλεῖστον αὐτὰ ἀφ' αὑτῶν ὁρίζειν, τὰ δὲ ὁμοιότατα μάλιστα εἰς ταὐτὸν συνωθεῖν, διὸ δὴ καὶ χώραν ταῦτα ἄλλα ἄλλην ἴσχειν, πρὶν καὶ τὸ πᾶν ἐξ αὐτῶν διακοσμηθὲν γενέσθαι. For this passage as an implicit critique of Democritus, Leucippus, and Empedocles, see Cornford (1935, 198-203), and Gregory (2001, 22-26; 2007, 144).

35 Skemp (1942, 111) makes a similar point but, instead of a succession of events, talks about duration: "One cannot dismiss the doctrine of a literal creation of the formed universe in time by quoting the saying that time came into being with the universe. This does not imply that there was no duration before the creation of the formed universe. Χρόνος is the image of eternity moving according to number: it is the πέρας imposed upon an ἄπειρον of duration." See also Hackforth 1959, 22. But Skemp's duration may face the same objection as Vlastos' precosmic time. It is a notion that is not in the text and has to be posited by the reader. But this can be seen as imposing a unified and anachronistic concept or distinction which is absent in the text. What I argue, instead, is only that before the creation of time we have a succession of events that cannot be counted or measured but that it is described with the vocabulary of the relations of before, after, and simultaneity. Given the way Timaeus defines time, the precosmic sequence of events cannot be said to happen in time.

operates with a restricted notion of time that sets a higher threshold. For a sequence of events to occur in time as defined by Timaeus, we need more than simple relations of before, after, and simultaneity.

4.3.2.3 God's Activity Is Always the Same If Correctly Specified

The god's proper activity is being wholly good. Specified as such, it is true before, during, and after the creation of the cosmos. It is not difficult to see why the god is good during the creation of the cosmos since he is performing a good deed. In fact, he creates and orders because he is good, not the other way around:[36]

> Very well then. Now why did he who framed this whole universe of becoming frame it? Let us state the reason why: He was good, and one who is good can never become jealous of anything. And so, being free of jealousy, he wanted everything to become as much like himself as was possible. In fact, men of wisdom will tell you (and you couldn't do better than to accept their claim) that this, more than anything else, was the most preeminent reason for the origin of the world's coming to be. The god wanted everything to be good and nothing to be bad so far as that was possible, and so he took over all that was visible—not at rest but in discordant and disorderly motion—and brought it from a state of disorder to one of order, because he believed that order was in every way better than disorder. Now it wasn't permitted (nor is it now) that one who is supremely good should do anything but what is best. Accordingly, the god reasoned and concluded that in the realm of things naturally visible no unintelligent thing could as a whole be better than anything which does possess intelligence as a whole, and he further concluded that it is impossible for anything to come to possess intelligence apart from soul.[37] Guided by this reasoning, he put intelligence in soul, and soul in body, and so he constructed the universe. He wanted to produce a piece of work that would be as excellent and supreme as its nature would allow. This, then, in keeping with our likely account, is how we must say divine providence brought our world into being as a truly living thing, endowed with soul and intelligence.
>
> *Timaeus* 29d7–30c1[38]

36 A point also made by Harte (2002, 221) who reminds us of *Euthphr.* 10a2–3.

37 See *Ti.* 46d5–6.

38 Λέγωμεν δὴ δι' ἥντινα αἰτίαν γένεσιν καὶ τὸ πᾶν τόδε ὁ συνιστὰς συνέστησεν. ἀγαθὸς ἦν, ἀγαθῷ δὲ οὐδεὶς περὶ οὐδενὸς οὐδέποτε ἐγγίγνεται φθόνος· τούτου δ' ἐκτὸς ὢν πάντα ὅτι μάλιστα ἐβουλήθη γενέσθαι παραπλήσια ἑαυτῷ. ταύτην δὴ γενέσεως καὶ κόσμου μάλιστ' ἄν τις ἀρχὴν

Consider now the situation after the creation of the cosmos. At this point, the god's activity is contemplating his creation and abstaining from destroying what he created.[39] The immortality of the cosmos and time depends on the god's active and continuous decision not to destroy the cosmos. That is what it means to be good once the cosmos has been created.

Some scholars argue that a literal reading would imply that after the creation, the god undergoes some change. The passage that seems to suggest this is *Timaeus* 42e5–6: Καὶ ὁ μὲν δὴ ἅπαντα ταῦτα διατάξας ἔμενεν ἐν τῷ ἑαυτοῦ κατὰ τρόπον ἤθει. Zeyl (2000, 30), for example, translates as follows: "When he [i.e., the god] had finished assigning all these tasks, he proceeded to abide at rest in his own customary nature." This seems to imply that the god's activity stops. However, this is incorrect because—as Cornford ([1935] 1997, 147) has pointed out—*emenen* does not mean rest or cessation of activity. Some other translations suggest that the god changed because he returned to his habitual state.[40] But again, the text does not imply a return to a previous state but only that he remained in character. In this regard, Cornford's translation is more precise: "When he had made all these dispositions, *he continued to abide* by the wont of his own nature" (my emphasis). Then, the text only amounts to saying that after the creation, the god was still good.

The real problem, you may think, is explaining god's activities before the creation of the cosmos. Although Timaeus' account does not say anything about this, there are various possible options compatible with the god's goodness. For example, the god could have been looking at the Forms. After all, Forms are the proper object of his intelligence.[41] Or, perhaps he was busy with previous, unsuccessful attempts at creating the best possible cosmos. Here, it is

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κυριωτάτην παρ' ἀνδρῶν φρονίμων ἀποδεχόμενος ὀρθότατα ἀποδέχοιτ' ἄν. βουληθεὶς γὰρ ὁ θεὸς ἀγαθὰ μὲν πάντα, φλαῦρον δὲ μηδὲν εἶναι κατὰ δύναμιν, οὕτω δὴ πᾶν ὅσον ἦν ὁρατὸν παραλαβὼν οὐχ ἡσυχίαν ἄγον ἀλλὰ κινούμενον πλημμελῶς καὶ ἀτάκτως, εἰς τάξιν αὐτὸ ἤγαγεν ἐκ τῆς ἀταξίας, ἡγησάμενος ἐκεῖνο τούτου πάντως ἄμεινον. θέμις δ' οὔτ' ἦνοὔτ' ἔστιν τῷ ἀρίστῳ δρᾶν ἄλλο πλὴν τὸ κάλλιστον·λογισάμενος οὖν ηὕρισκεν ἐκ τῶν κατὰ φύσιν ὁρατῶν οὐδὲν ἀνόητον τοῦ νοῦν ἔχοντος ὅλον ὅλου κάλλιον ἔσεσθαί ποτε ἔργον, νοῦν δ' αὖ χωρὶς ψυχῆς ἀδύνατον παραγενέσθαι τῳ. διὰ δὴ τὸν λογισμὸν τόνδε νοῦν μὲν ἐν ψυχῇ, ψυχὴν δ' ἐν σώματι συνιστὰς τὸ πᾶν συνετεκταίνετο, ὅπως ὅτι κάλλιστον εἴη κατὰ φύσιν ἄριστόν τε ἔργον ἀπειργασμένος. οὕτως οὖν δὴ κατὰ λόγον τὸν εἰκότα δεῖ λέγειν τόνδε τὸν κόσμον ζῷον ἔμψυχον ἔννουν τε τῇ ἀληθείᾳ διὰ τὴν τοῦ θεοῦ γενέσθαι πρόνοιαν.

39 See e.g., *Ti.* 37c, and 53a–b.

40 See, for example, Fronterotta's (2003) translation: "E, una volta disposto tutto quanto, eglio tornò a permanere nella propria condizione abituale." Waterfield (2008) offers a similar translation: "With these arrangements in place, he resumed his life in his proper abode."

41 See *Ti.* 51b6–e6.

crucial to remember that the god of the *Timaeus* may be wholly good but there is no evidence to suggest he is almighty. Thus, there is no reason to acknowledge an inconsistency, or jump to a metaphorical or counterfactual reading. The cosmos' punctual creation is explained by god's limited power, not by his goodness. Think about it in this way. If I want to give you a pot for your birthday—because that is the kind of thing you like—but it takes me a long time to master the technique, and even various failed attempts before I produce the final version, at no point do I love you any less because of my clumsy hands.

As can be seen, then, even if we take the cosmogony as a description of facts, the god is at no point lazy, envious, or inactive. He is just as good as he can be.[42] Think about my son and his room again. Did he behave well today? Even if I am ignorant about the specifics of his behaviour during the day, I know he was playing in his room and that this is what normal children do. Then, when I asked him to tidy up his room, he complied. After that, content with what he had just done, he waited quietly to show me his ordered room, refraining from taking things out of their place again. It would be silly to say that before tidying up, or while he was waiting, he stopped behaving well.

4.3.2.4 Traces of the Elements and Disorderly Motion in the Pre-cosmos

The pre-cosmos has to be in movement because changeless existence is the prerogative of what always is, but then there is a question about the origin of that motion. It seems that if it is divine, it has to be ordered. Yet, the pre-cosmos is in huge disarray. So, what could be the source of these movements? The answer depends on whether souls are the origin of all motion or not. This is a highly contentious issue, given that the *Timaeus* is not completely clear in this respect. But in both cases, there are various possible solutions compatible with a factual reading of the cosmogony. Let me briefly explain why I prefer one of these alternatives over the others.

Vlastos (1964, 390–99) argues that Timaeus' cosmogony does not need to assume that the soul is the only source of movement. For him, the traces introduce a type of causation that does not depend on the soul.[43] The traces may have an unmediated, but tenuous, causal relation with the Forms of the elements.[44] How this relation is possible is, however, left unexplained. In contrast, Harte (2010, 133) suggests that the traces may not be the causal consequence

42 Although it went unnoticed, I think this is exactly what Vlastos (1964, 406) was trying to say.

43 See *Ti.* 52d4–53a3 and 53b.

44 But see O'Meara's (2017, 58–63) argument against the idea that the traces are imitations of the Forms.

of anything, but just a "brute fact that is left unexplained."[45] After all, even if all perceptible bodies must come into existence, traces may not be bodies (see *Ti.* 28b2–c2; 31b4–6). This, of course, might sound unsatisfactory. After all, by calling them "traces," the text invites us to reflect on how they could resemble the elements at all, and what ontological status they have. We are told they are powers, offer resistance, are causally active, have certain natures, and can be distinguished in terms of their kinds at some minimal level (see *Timaeus* 52d2–53b7). So, if they are not bodies in the proper sense, they at least display some corporeal features. Thus, the traces may not be completely unexplainable; perhaps there is some way to explain them through the tenets explicitly endorsed in the dialogue. In any case, notice that these alternatives imply no inconsistency. They just acknowledge that the pre-cosmic traces lie at the explanatory limit of their interpretations (this, however, is not ideal, given EP2).

Consider now the idea that souls are the origin of all motion. This is suggested at *Laws* X, 892a1–b2:

> ATHENIAN: It's the soul, my good friend, that nearly everybody seems to have misunderstood, not realizing its nature and power. Quite apart from the other points about it, people are particularly ignorant about its birth. It is one of the first creations, born long before all bodies, and is the chief cause of all their alterations and transformations. Now if that's true, anything closely related to soul will necessarily have been created before body, won't it, since soul itself is older than body?
>
> CLINIAS: Necessarily.[46]

The passage, of course, is far from conclusive. Soul may be the cause of all motion inside the created cosmos where proper bodies exist. But if we accept the suggestion, it is still possible to argue for various interpretations. Perhaps the best-known option here is the one defended by Proclus—and more recently Clegg (1976)—who argues that the pre-cosmos as a whole has a non-rational,

45 See also Jelinek (2011).

46 Translated by Saunders in Cooper and Hutchinson (1997), with minor modifications. The Greek reads as follows: ΑΘ. Ψυχήν, ὦ ἑταῖρε, ἠγνοηκέναι κινδυνεύουσι μὲν ὀλίγου σύμπαντες οἷόν τε ὂν τυγχάνει καὶ δύναμιν ἣν ἔχει, τῶν τε ἄλλων αὐτῆς πέρι καὶ δὴ καὶ γενέσεως, ὡς ἐν πρώτοις ἐστί, σωμάτων ἔμπροσθεν πάντων γενομένη, καὶ μεταβολῆς τε αὐτῶν καὶ μετακοσμήσεως ἁπάσης ἄρχει παντὸς μᾶλλον· εἰ δὲ ἔστιν ταῦτα οὕτως, ἆρ' οὐκ ἐξ ἀνάγκης τὰ ψυχῆς συγγενῆ πρότερα ἂν εἴη γεγονότα τῶν σώματι προσηκόντων, οὔσης γ' αὐτῆς πρεσβυτέρας ἢ σώματος; ΚΛ. Ἀνάγκη.

appetitive, evil soul. But this is not the only possibility. There is no reason to assume that the pre-cosmos as a whole has a strong unity. Perhaps, then, each trace has a non-rational soul. A problem remains, though—non-rational souls could explain the erratic movements of the traces, but it is difficult to see how they can explain the traces' resemblance to the elements.

Consider the Greek word used here for the traces: *ichnē* (pl. of *ichnos*). A trace or footprint is the mark or residue left by something's or someone's actions. It is often the term used to refer to the footprints or signs left by divine action. The choice of words here suggests that the traces' movements and resemblance to Forms are caused not by non-rational souls, but by god's previous activity.[47] The traces could be, for example, the remains of a previous cosmos the god destroyed to create a better one. In the *Statesman*'s cosmological myth, for instance, the god causes huge chaos and natural disasters as collateral damage during his intervention to re-establish the immortality of the cosmos.[48] Similarly, the god of the *Timaeus* might have needed a trial-and-error period to perfect his crafting skills. Of course, the decay of a previous cosmos may not have been due to god's direct activity but to that previous cosmos' limitations. The god's previous attempt might have crumbled unintentionally. If we go back to the pottery example, when I am practicing the skill, I might destroy a pot because I am unhappy with the results, or it could plummet from my fingers despite my best efforts (notice that I can use the clay again, and the clay might retain some properties of its previous shape).

This interpretation, however, raises a question about what happened before those previous attempts or divine actions, which is certainly left unexplained by the text. But notice that this is not the same as leaving passages of the text unexplained by the interpretation, and it certainly does not amount to an inconsistency. If I give you a recipe for bread pudding, one of the ingredients is pieces of stale bread, but I will not give you any instructions or explanations

47 Another reason to think that the traces do not move themselves is the hierarchy of motion at *Ti.* 89a1–5. There, Timaeus claims that "the best of the motions is one that occurs within oneself and is caused by oneself. This is the motion that bears the greatest kinship to understanding and to the motion of the universe. Motion that is caused by the agency of something else is less good. Worst of all is the motion that moves, part by part, a passive body in a state of rest, and does so by means of other things" (τῶν δ' αὖ κινήσεων ἡ ἐν ἑαυτῷ ὑφ' αὑτοῦ ἀρίστη κίνησις—μάλιστα γὰρ τῇ διανοητικῇ καὶ τῇ τοῦ παντὸς κινήσει συγγενής—ἡ δὲ ὑπ' ἄλλου χείρων· χειρίστη δὲ ἡ κειμένου τοῦ σώματος καὶ ἄγοντος ἡσυχίαν δι'ἑτέρων αὐτὸ κατὰ μέρη κινοῦσα).

48 Sorabji (1983, 271) reminds us that Severus, a Middle Platonist from the second century CE, held a similar position. See ap. Procl. *In Ti.* (Diehl) 1.289, 7–13; 2.95, 29–96, 1. On the *Statesman* myth, see also chapter 1.

about how to get those pieces of stale bread. My recipe assumes those ingredients, just as Timaeus' cosmogony presupposes the traces. Timaeus' task is to offer an account of the origin of the current cosmos only. Nothing in the *Timaeus* implies that the current cosmos is the only one that has ever existed, and if there were more, Timaeus is not obliged to give an account of the previous ones.[49] Moreover, we can even conceive of this situation as laying the groundwork for further discussion on the matter (I have the Stoic reception of the *Timaeus* in mind here).

To sum up, we can describe the pre-cosmos as a non-temporal, incorporeal, and disordered stage of the *chora* and the powers in it. At the same time, and without implying any inconsistency, we can add that the pre-cosmic events happen in a sequence of events that presupposes relations of before, after, and simultaneity, the traces show certain corporeal features, and there is some basic but non-progressive order. Ontologically, traces in the *chora* have the most minimal degree of existence possible (even created elements rank very low on the scale, cf. *Timaeus* 49c7–50a4). They sit at the antipodes of the created cosmos, which is as close to "what always is" as it could be. This should help us understand what Plato means by time, bodies (and individuation), and divine order.

4.4 Conclusions

Let me check whether I have delivered on my promises. Can my interpretation avoid the objections raised against previous attempts at reading the cosmogony as a factual and consistent account? The first complaint is that the type of reading I am proposing has no choice other than to posit a pre-cosmic time without sufficient textual evidence. However, as I have insisted, this is not true. There is no evidence to suggest that, in the *Timaeus*, a simple succession of events implies the presence of time. As I have shown, it is the other way around. The evidence suggests that in the dialogue, time presupposes the succession of events and the relations derived from it, but not vice versa.[50] However, again and again, readers of Plato assume that succession of events implies time. But by doing this, they impose a (Newtonian) conception of time that is completely absent from the text.

49 See *Ti.* 29b1–2 and 31a–b. The text says there cannot be two simultaneous *cosmoi* but does not rule out a series of previous *cosmoi*.

50 This is one of the main differences between my interpretation and previous factual and literal readings (i.e., a2).

The second objection against a consistent and factual reading of the cosmogony is that it is incompatible with the immutable relationship the god has with the world. However, as I have explained, once the activity of the god is properly specified, the proposal is compatible with the claim that god's activity is immutable. God is always good. If the god's relation to the world is to be good to it, then there is no inconsistency in saying that he did not create it until he was ready, then kept creating until there was nothing he could do to make it better. After that, the appropriate thing for him to do was to stop creating and refrain from destroying what he had made. Acting otherwise at any stage would change his good relationship with the cosmos.

A third objection is that this type of interpretation contradicts important Platonic doctrines found elsewhere. But as I reject a strong unitarian doctrinal reading of Plato, for me there is no serious problem with contradicting claims and arguments Plato offers in other texts (see EP4 and 5). Some souls in the *Timaeus* are generated. This is inconsistent with the *Phaedrus*, but consistent with the *Laws* (see *Laws X*, 892a1–b2).

Finally, you may ask whether I can explain why the world was created at that specific moment and not sooner or later. To this, one might answer that the god is not omnipotent, and all we need to know is that it created the cosmos at some point. It does not follow from the fact that we cannot determine when the cosmos started that there is no punctual beginning; humans would have no way of knowing. But the issue does not really depend on humans' cognitive limitations. The objection presupposes a pre-cosmic time, and since in my reading there is no such thing, the objection no longer makes sense. All we can say is that the cosmos began at the first moment of cosmic time, a punctual beginning established in relation to the pre-cosmic states that happen before and the ordered sequence afterwards.

Scholars have raised many more objections to the type of interpretation I am defending. I cannot possibly address every single one of them here. However, the exegetical principles proposed in section 4.3 block many of these objections. For example, metaphorical interpreters often resort to the authority of the Platonic tradition, even if it imposes a reading with insufficient textual evidence and forces a metaphorical reading (which go against EP3 and 4). Similarly, some objections only arise if one upholds a doctrinal reading of Plato, to the detriment of internal cohesion and explanatory power (which conflicts with E1 and E2).

I hope I have shown that reading the *Timaeus* in the way I am proposing is not impossible or mistaken but, on the contrary, close to the text, explanatory, and philosophically interesting. There is no need, then, to revert to interpretations that accept the inconsistency of the creation of time and risk turning

a likely story into an impossible one. Moreover, the reading I propose is not rejected by the entire Platonic tradition. It is the type of reading that seems to have led the Stoics to their own cosmology and, on this issue, it is the interpretation championed by Plutarch in the Neoplatonic circle. Finally, if this reading is correct, it may mean that the rest of the Neoplatonic tradition was not reading Plato as closely as we would like to imagine, but this is compensated for by the fact that the powerful metaphysics derived from their metaphorical reading of the *Timaeus* belongs to their genius and not to Plato's.[51]

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CHAPTER 5

Time and Light in Plato's *Timaeus*

Carolina Araújo

In societies more connected to nature, human beings organize their lives according to days that last from sunrise to sunset. These days are shorter in one season and longer in another.[1] A year will pass before the days return to the same duration. Such a day is an unequal unit, it is place-dependent, and it does not fit mathematically into a calendar. It is, however, evident; it is a phenomenon of the movement of sunlight. Our twenty-four-hour day is based on regular mathematical units to build a year; it allows us to establish time zones across the whole planet and to build a global calendar. It does not measure the duration of the presence of sunlight. Today we consider that it is calculated considering both the rotation and the translation of the Earth. Finding such a unit in a geocentric model is a much more complex enterprise and a challenge for astronomers.

This chapter is about the movement of sunlight and the concept of time in Timaeus' cosmology in Plato's *Timaeus*. It argues for three connected theses: (I) that light is a grounding principle of his account; (II) that Timaeus puts forward a proposal for the calculation of a cosmic calendar, i.e., the counting of time according to the movement of sunlight throughout the whole world; and (III) that he understands time (*chronos*) as the movement of all heavenly bodies relative to the motion of light streaming from the sun.

5.1 The Evidence of Light

According to Timaeus: (A) "[The world] is generated[2] *for* it is seen and touched and has a body. All such things are perceptible. Perceptible things, grasped by

1 This paper was prepared in the course of a seminar on the *Timaeus* taught together with Alice Bitencourt Haddad at Universidade Federal do Rio de Janeiro. I would like to thank her as well as Luan Reborêdo Lemos, Edil Carvalho and Luciana Fabião Chachá for the unforgettable conversations on these and other philosophical problems.

2 The polemics about the generation of the world has existed since Antiquity and does not concern us here (see Aristotle, *Cael.* I, 10, 279b33–280a11 for the Academic controversy; Proclus, *In Ti.* 1.276.30–277.13 for a series of different, later interpretations, and Baltes 1976 for

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belief with perception, were shown to be in generation and generated" (28b7–c2 my emphasis). A long-standing tradition has interpreted this argument as an inference from a previous passage, which states that (B), "What is that which always is, and has no generation, and what is that which is always[3] generated and never is? The former is grasped by the intellect with justification; it is always the same; the latter is grasped by belief with irrational perception, it is generated and destroyed, and never really is" (27d6–28a4). I challenge this inferential reading for the following reasons.

B's first sentence is a question. One expects an answer in the form of either a definition, a series of examples, or a description of things that always are and things that are always in generation. Instead, we have a description of the different capacities by which we apprehend each of them, and no explanation about the capacity/things correspondence. Taken in isolation, B must be read as postulating this correspondence. If A is inferred from B, then "Platonism" is a premise in Timaeus' cosmology, i.e., he presupposes the sharp distinction and separation between what is and what is generated, instead of arguing for it.

A indeed refers to B by the expression "were shown," so we are reminded of the correspondence. However, this is the last point A makes. Before it, A introduces what was missing in B: the things that are always in generation. The conjunctive *for*, which announces the reason for the correspondence, turns A into a grounding clause for B (restricted to things in generation), and not vice versa. It is because something is "seen and touched and has a body" that it is generated. This is not a correspondence anymore: there is a good reason for us to accept one of the legs of "Platonism," i.e., that there are things in constant generation, and the reason is that we perceive them as such. Our perception grounds the account of things in generation, a cosmology for instance.[4]

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a detailed analysis of the debate's development). The focus of this chapter is on the notion of being constantly "in generation," mutable, and subject to change (see Hackforth 1959, 19).

3 Whittaker (1969; 1973) disputed the *aei* in the text, and Robinson (1979) supplied arguments in order to reject Proclus' interpretation that the world is always in generation. I think that the clause "never is" suffices to claim that the world is in constant generation; therefore, my interpretation stands independent of the interpolation of *aei*. If I am correct in supposing that A grounds B, and not vice versa, Proclus' interpretation is vindicated.

4 In contradistinction to a long tradition beginning with Proclus (*In Ti.* 1. 236.10–11), I suggest that the grounding proposition be not "there are things that are generated," but rather "there are things that are seen." I understand that this methodological premise is what makes Timaeus' account likely: he introduces definitions and axioms, but only to the extent to which they might provide good explanations for this basic perceptual evidence.

Perceived, therefore generated:[5] how does Timaeus explain this inference? The answer is also in A: if it is seen and touched, the world must have a body. Actually, as Timaeus later clarifies, it has two bodies: fire, because it is seen, and earth, because it is touched: "corporeal then must be that which is generated, being seen and touched; nothing would 'become seen' apart from fire, nor would anything "become touched' without something solid, and there is no solid without earth" (31b4–5). What Timaeus does postulate is the concept of basic bodies, particularly those of fire and earth.[6] It is the concept of body that allows him to explain perception and generation. For the purpose of this chapter, I shall leave aside the proof of the existence of earth and explain only how the argument works in the case of fire. I submit it is constructed as follows:

C1. Empirical evidence: We see the world.
C2. Axiom (principle of a cosmological account): We see fire (light coming from fire).
C3. Theory: Fire (light coming from fire) is a body in constant generation.
C4. Conclusion: What is seen is in constant generation.

The argument is not valid for fire in general, but only for one kind of fire, light, for this is the only fire involved in vision. Timaeus explains the different kinds of fire: "After that one must have in mind the different kinds of fire that were generated, such as the flame; the emission[7] from the flame that does not burn but instead provides light to the eyes, and the residue of the extinguished flame in the embers" (58c5–d1). Kinds of fire are flame, ember and the emission from the flame that provides the eyes with light. The latter is the basic element in the explanation of vision:

> "Among the organs, eyes were the first to be designed as light-bearers and bond-makers for the following reason: they contrived to turn the fire that

5 For a similar assumption see Dicks 1970, 60; Vlastos 1975, 36; Johansen 2004, 175–76. Taylor (1928, 69–70) takes the first premise, "The world is seen and touched," as false, and quotes Kant in support: the world as a whole is not seen and touched. In response, I would say that Timaeus supposes the world is a unity that accounts for the natural behavior of the sum of its components. The distributive reading of the adjectives is perfectly plausible, meaning that the components of the world are seen and touched.

6 For fire and earth as the two most fundamental constituents of the world, see Archer-Hind (1888) 1973, 96. Air and water are principles on other methodological grounds, postulated to grant the continuity of the world's body, and not simply to ratify Empedocles, as Taylor (1928, 88 ff.) defends. Proclus reports that Theophrastus accuses Plato of not providing a proper explanation of the other two bodies (Proclus, *In Ti.* 2. 6.21–28).

7 The term *apion* appears in only one manuscript, F, although it is attested by Galen. See Archer-Hind (1888) 1973, 211.

> does not burn, but yields gentle light proper to every day, into a body.[8] They made the pure fire inside us, which is akin to [daylight], to flow through the eyes, condensing it all together, in particular the center of the eyes, so it can become smooth and narrow and keep out everything that is coarser, and letting in only what is by itself pure. Therefore, when the light of each day surrounds the flux of the vision, like touches like, they are joint together and become one single body out of their kinship, combined along the direction of the eyes, by means of whose firm resistance [the fire] that emerges from inside is connected with the external [fire]." (45b2–c6).

Eyes are light-bearers[9] and bond-makers. The light our eyes bear comes from the fire within us. Only light, the pure fire provided by emissions from the flames within us, reaches our eyes because they filter the other ones out. This light binds us with the light present outside of us, daylight. Daylight is formed by many particles coupled together in an extended and continuous body. In daytime, when daylight is in contact with our eyes, the light in them connects it with the fire within us, forming a single body. Timaeus will later recall this explanation by saying that: "we previously explained [about the affections of sight itself] that a body akin to the one in us is generated daily" (64d6–7). In this passage, he claims that this continuous contact of light from the outside to the inside of us is what finally reaches our souls, causing our visual perception. What we call our "visual field" is, according to Timaeus, a series of particles of

8 I do not follow Archer-Hind ([1888] 1973, 155–6), Cornford (1935, 152), Brisson (1998, 244), or Fronterotta (2003, 243) in removing the comma between *hēmeras* and *sōma*, for *oikeion* qualifies *phōs*, not *sōma*. I also disagree with Martin (1841, 156–57), who keeps the comma but understands the passage as describing how light was created *as* a particle. I think Taylor (1928, 277) is right in suggesting that the point here is to explain how a continuous body was created after dispersed particles of light: those in the eyes, those in daylight, and, finally, those in the visible objects.

9 They are not light-streamers (as for instance in Nightingale 2016, 57). Timaeus does not endorse Empedocles' view (according to Plato, *Meno* 76c7–e2), which Aristotle criticizes at *De sensu* II, 437b11 ff. The light in our eyes does not propagate in external space because external space is taken up by continuous daylight. The light carried by the eyes accounts for (i) the way vision affects our souls (the continuity between internal fire and external light); (ii) the correspondence between external movements and the affection of the soul; and (iii) the limitation of our visual field (both by the narrowness of the eye, *pyknon* [45b8], and the presence of daylight). Finally, *to tēs opseōs rheuma* (45c3) should be read as the flux from the internal fire to the surface of the eyes which allows vision to happen, just as described at 45b6–7.

light connected to each other, forming this unified body of light whose movement affects us, producing sight.[10]

At the other end of this continuous body are the visible objects. Visible objects are not visible *because* we see them, but due to a property they have, i.e., being endowed with color (67c5–6).[11] Color is "a streaming flame from every single body, which has particles commensurate with vision in order to generate perception" (67c6–7). This occurrence of flame is confusing, for, as we saw, the term was attributed to the burning kind of fire. The most charitable reading, to my view, is to consider "streaming flame" as the part of the flame that streams. This would align the passage with the definition of light as the effluence of a flame at 58c5–6, allowing us to infer that colors are varieties of light that stream from the internal fire of extended bodies. Light therefore has different sizes that produce different effects, namely the colors, when in contact with daylight. When the color of objects hits the continuous body of light, it homogeneously affects all its parts (see *homoiopathes* [45c7]). If our eyes are in contact with the other extreme of this body, then this impact affects us, and we see that specific color.

As expected, fire is a corporeal component of the world that makes it visible; to be more specific, one kind of fire, light, makes sight happen when its particles are in contact with each other. When we move our eyes, we connect them to other particles of light and to other visible bodies. On the other hand, the movement of external bodies may also bring these objects in and out of our visual field. The emphasis is on: (i) limitation, we cannot always see everything; (ii) continuity, we see the effect of external objects in one single body that is connected to us; (iii) tangibility, vision is a kind of touch; and (iv) mobility, what we see constantly changes. We see due to movements of particles that impose different configurations onto the body of daylight, depending on how they fit with each other. Something visible, such as the world, is in generation and generated because the impact of color on the body of light connects other particles to it. Particles of light are always in and out of touch with the body of daylight, which is therefore always generating itself.[12]

This is the explanation for the theory in C3, deduced from the axiom in C2. If I am correct, it assumes that our perception is caused by real phenomena and provides us with real data about the world, even if it is restricted to

10 See Rivaud 1925, 104–50. Ierodiakonou (2005, 221ff.) calls it the visual body, and states that it is a necessary condition for vision.

11 See Ierodiakonou 2005, 229.

12 Because it is based on particles of light, Timaeus' account of vision is very different from the "Protagorean" one we find in the *Theaetetus*, at 151e4 ff.

some very basic affections. When it comes to vision, this data tells us that there are variances of light. Light and its motion are basic phenomena in the world which must be accounted for. Timaeus postulates the concept of body to explain them, this is why light *qua* body is an axiom of his cosmology. In doing so, he shows us how his "Platonism" works: perceptual data are facts we aim to explain. For these explanations, he postulates concepts, which work as axioms for deductive theories that must still cohere with the perceived facts. Platonism is the separation between theoretical models and perceptual data, and the assumption that the latter is a "likeness" (*eikōn*) of the former. The ontological and epistemological premises of Platonism lie beyond the scope of this chapter. My point is simply that we have empirical evidence of *eikones*.

Before I proceed, I must mention that Timaeus might want to revise his theory when it comes to sight. There is a flaw of great proportions in his attempt to ground cosmology in vision and vision in light: the explanation of night vision. After detailing his corporeal explanation of vision, Timaeus makes the following consideration: "At night, however, when the kindred fire departs, [vision] is cut off. Reaching only what is unlike itself, it undergoes change and dries out. In the air, there is no more something akin to it, since it doesn't have fire" (45d3-6).

In this passage, he describes night as the withdrawal of outer daylight, which he claimed to be the medium required for sight. Then he explains one important consequence of this phenomenon: the absence of vision during the night. Without contact with sunlight, the light in the eyes changes itself into another basic body and dries out; this disrupts the visual field, and we cease to see external objects. The denial of night vision is a major mistake in a cosmology committed to explaining the world as we see it, for it leaves two phenomena unexplained. The first is that the mere presence of earthly fire may allow us to see at night. The second, and in my view the most serious, is that Timaeus affirms that we see the heavenly bodies at night (47a1–3). Moreover, he claims that this observation provides us with a particularly relevant good: astronomy. If night is absence of daylight, and vision requires daylight as its medium, what is there between that star and my eyes when it is dark outside?[13]

We can but speculate on Timaeus' answer. Further on in his account, he explains that the heavenly bodies are all mostly constituted by fire (40a2–4) for they gleam. Many interpreters agree that this means that Timaeus allows for the fixed stars to be self-luminous, but they disagree that this is also the

13 Archer Hind ([1888] 1973, 156) formulates the problem regarding distant objects and thinks Timaeus does not provide an answer. See Aristotle's criticism of the model at *De anima* III, 12, 435a5.

case with the wandering bodies.[14] In my view, the concept of self-luminosity misleads this discussion. If all visible bodies, both on Earth and in the sky, are colored and stream light, they are all constituted by fire and brilliant to view, even when they are not seen. All bodies are self-luminous, but this is not sufficient for them to be seen; contact with the body of daylight and with the eyes of the observer is required. A description of night vision coherent with Timaeus' account of sight demands an explanation based on this premise of sight as a kind of touch.

As matters stand, Timaeus has a dilemma concerning night vision. One option is to claim that all celestial bodies produce intermediary light, which allows them to be seen at night, then try to provide a reason why this medium is not enough to make us see things around us at night. The alternative is to grant the sun a unique status as a source of this intermediary light,[15] to maintain that his account of vision is valid for every visible body, and to be at pains to explain how sunlight would come to our eyes at night, letting us see the stars.[16] He explicitly takes the second option. This is the flaw.

Timaeus may have stronger reasons for being committed to the idea that sunrays reach all the visible parts of the world. He is very clear about the sun being the source of the light that makes the whole world visible (39b5–6, see more below). From what we already know, this does not mean that all the light in the world comes from the sun. Quite the opposite: the sun provides the body of daylight, connecting and disconnecting the particles of light scattered all

14 Taylor (1928, 213–14) and Cornford (1935, 153) agree that stars are self-luminous. Taylor thinks the text is compatible with the planets reflecting the sunlight, but Cornford claims that nothing in the text suggests this possibility.

15 This singular function of the sun coheres with Socrates' account in the *Republic*, in which it is responsible for "making our vision see the light in the best way possible and for the visible objects to be seen" (508a4–6). Proclus ascribes to Plato the view that the heavenly bodies are seen because of sunlight (*In R.* I, 224.2–3). It is debatable whether this is also in agreement with the definition of the sun in the *Theaetetus* (208d1–3): "the brightest [among the bodies] that move around the earth in the sky".

16 Cornford (1935, 153) suggests that we read some Empedocles (Pseudo-Plutarch, *Stromae* 10) into Timaeus' lines, according to which night would be a mixture of air and a little fire. To me this is not a sufficient explanation. Were this "little fire" enough to make me see that star, it would allow me to see other things around me, unless a body of light were to exist only between the eye and the sky, and not around me. Empedocles employed the reflections of the sun to account for the visibility of the sky. In DK B18 he describes how the moon shines by reflecting sunlight, and fragment DK B19 does something similar with the rainbow. It follows from my argument that "reflection" of light is not a concept Timaeus would use: bodies stream light and they are seen if the proper medium connects this light to our eyes.

around the world. In what follows, I shall argue that the cosmic movement of sunlight matters to him for another reason, namely, his conception of time.

5.2 Cosmic Nights-and-Days

This section details the celestial movement of sunlight previously mentioned and aims at explaining the concept of cosmic nights-and-days, the complex unit of a Timaeus' calendar.

Within his geocentric model, Timaeus explains the movement of the celestial bodies according to two motions: the same and the different (36c4–5). The circular movement of the same is from east to west (36c6), perpendicular to the celestial equator (the line of the horizon), along the equatorial coordinate system. The visual evidence of this movement comes from the observation that it takes 23 hours and 56 minutes for a star with this circular movement to reach the same position it previously had in this coordinate system. This motion accounts for the phenomenon that astronomers today call the "sidereal day",[17] although in a geocentric model, as we shall see, another factor is involved in its explanation.

The movement of the different, divided into seven orbits, is a force in the opposite direction (west to east, 36c7), along a band inclined to the equator (36c7, 38e6–39a2), later called the zodiac. The middle line of the zodiac is the apparent path of the Sun, the ecliptic. The heavenly bodies in the zodiac vary their position in relation to the ecliptic. Scholars debate if the movement of the different accounts only for the inclination of the zodiac or also for the "wandering"[18] of these bodies, their retrogradation (36d2, see 40b6–8). This debate does not concern us here. Due to the translation of the Earth, every day the Sun varies its position in the equatorial coordinate system. It takes a little more than 365 days for the Sun to make a complete circuit of these variations, and this visual phenomenon is the basis for calculating a solar year.

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17 A sidereal day is the period of a rotation of the Earth around its axis. As such, the concept requires a heliocentric astronomical model.

18 Moon, Sun, Mercury, Venus, Mars, Jupiter, and Saturn: these are all the heavenly bodies that can be seen with the naked eye and follow the movement along the zodiac. Gregory (2003, 7, 14) supposes that this is the movement of the different, which is a regular, circular motion, and concludes that retrogradation is a phenomenon that Timaeus acknowledges (38d2–4) but does not account for. He does not give reasons to reject an interpretation such as the one found in Martin (1841, II: 88) or Dicks (1970, 118–19). According to them, the movement of the same is a motion of the whole cosmos (36c7–d1), which is countered by the movement of the different in the wandering bodies.

Contemporary astronomers added four minutes to the sidereal day to make up for the difference between it and the day that serves as a unit for the solar year, defining what we now call a solar day. For geocentric models, it is much more complex to explain what a solar day is.

Let us imagine an observer on Earth. He can see a constant translation of the fixed stars (40b4–6); he can also watch the sun for one year and conclude that, compared to those stars, the location of sunset and sunrise changes, that the presence of sunlight has different durations, and that the constellations visible in the sky at exactly midnight are different. From these observations, he can infer that, although the fixed stars revolve during a constant period (what we now call the sidereal day), there are some "differences" in the movement of the sun.[19] On the other hand, he can also conclude that the sun will come back to previous positions, and that these alterations occur in a cyclic mode, a solar year. The sidereal day and the solar year are the first cyclic units one can establish from observation, but they do not fit together to build a calendar.[20] Finding a common ground between the movement of the sun and that of the fixed stars was for Timaeus the basic step for building a cosmic calendar; he suggests a way of doing so after a very intricate argument about the function of the sun:

> So that there would be a visible measure of the relative slowness and quickness and [so that] the eight revolutions could find their way, the god kindles a light in the second orbit from the Earth, which we now call the Sun. Its purpose is to enlighten the whole world[21] to the maximum and to allow the living beings, to whom it suits, to possess number, learning it from the motion of the same and the uniform. Thus and for these reasons night-and-day was generated, the period of one translation of the most intelligent cycle (39b2–c2).

I offer the following reconstruction of the argument in this passage:

> S1. Evidence: The Sun provides light and moves along the second orbit from the Earth (39b4–5).

19 See Dicks 1970, 16 ff. and Vlastos 1975, 9–10.

20 Today we assume that a solar year has 365 ¼ days (in our conventional twenty-four-hour day), and the sidereal day has 23 hours and 56 minutes. For a history of different calendars, see chapter 6 in this volume.

21 There are reasons to consider *ouranos* as referring here only to the heavens, for the other two clauses concern only celestial bodies. However, I hope to have stated clearly in the first section that the sun is involved in lightening the whole world, and not only the sky.

S2. Axiom: The purpose of the Sun is to enlighten the whole world to the maximum (39b5–6);

S3. Corollary: There is a visible measure of the relative slowness and quickness of the heavenly bodies and[22] the eight revolutions can find their way (39b2–3);

S4. Corollary: "The living beings, to whom it suits, would possess number, learning it from the motion of the same and the uniform" (39b6–c1).

S5. Inference: "Thus and for these reasons, night-and-day was generated, the period of one translation of the most intelligent cycle" (39c1–2).

The Sun provides constant light to the world, creating a body of particles that makes it visible (S1). This is not a function it can perform to the fullest extent, only "to the maximum." It does not enlighten everything at once, for it is moving in an orbit,[23] as is everything else. Consequently, although there is never a moment when the whole world is dark, there are always places in which light is temporarily absent. These are local night-and-days, they are the *transitory position of a point relative to the sun*,[24] a position that determines if, at this moment and in this point, it is day or night.

Assuming Timaeus' thesis that vision requires the intermediary body of sunlight, suppose that we are to determine the relative position of two heavenly bodies, X and Y. In this situation, our visual data results from their location relative to the body of sunlight and consequently to the sun. The same reasoning

22 Archer-Hind ([1888] 1973, 128–29) needlessly corrects the manuscript *kai ta* for *kath'ha*. He claims that the text would otherwise amount to "the absurd conception that the heavenly bodies could not see their way until their orbits were illumined by the sun." Taylor thought the "absurd conception" to be simply a joke. I suggest a metaphorical reading, which is neither absurd nor comical. Since, as I shall argue, all the celestial bodies are moving, one only identifies their displacement because of their movement relative to the Sun and the body of sunlight. They do not literally need the Sun to move, but the Sun is necessary so that we can ascribe to them an orbit. Cornford (1935, 115) agrees with changing the text for a further reason: he denies that Timaeus assumes that the sun is the cause of the visibility of the other celestial bodies. Accordingly, he claims that "Plato's point is that the Sun is the only planet bright enough to make the difference of day and night conspicuous to mankind." He needs more than manuscript corrections to maintain this interpretation. He is compelled to translate εἰς ἅπαντα φαίνοι τὸν οὐρανὸν as "fill the whole heaven with his shining." Moreover, he thinks that the Sun's "daily revolution" provides the distinction between day and night, being also the "conspicuous unit of measurement in terms of which other periods can be calculated" (1935, 115). This is false and contradicts the text explicitly in that the "most intelligent cycle" (39c2) originates day and night.

23 This works as a subtle refutation of Critias' account of Phaethon diverting the Sun from its orbit at 22c3–d3 and consequently of the idea that the world is destroyed periodically.

24 See Proclus, *In Ti.* 3.139, 23–32.

applies to their movement and speed, for these categories also depend on a position located by sight. This is the meaning of the pun that says that due to the Sun, "the eight revolutions could find their way" (S3): visible positions in the sky are always relative to the body of sunlight, and consequently to the Sun. The reason was given in section one: luminous bodies are not seen simply because they emanate light, but because the light in them is in contact with the body of sunlight that streams primarily from the Sun.

Given Timaeus premises, the assumption that our visual evidence of the heavenly bodies depends on the location of the Sun is methodologically relevant, for an astronomer might have false visual evidence. For instance, not seeing a star in a specific position may be either explained because it is night in this location or by special phenomena connected to relative movement, such as eclipses (see 39c3–d5).[25] In order to know the heavenly bodies's real position and how they move, we must know what are the local night-and-days at every point in the world, which would result in a map of cosmic night-and-days.

Timaeus expects future astronomers to determine the ratio between all the relative periods of all the heavenly bodies (*en logo de pheromenous* [36d6]) and to find their common denominator (39c5–d2),[26] i.e., the period between two moments in which all of them are in the same position relative to each other (39c5–d2). This is the number that the living beings who are able to calculate will possess, due to their understanding of the movement of the Sun (S3): the map of all cosmic night-and-days.[27] Timaeus calls it the Perfect Year (39d4). There is nothing mystical about it;[28] it is simply the right unit for the world

25 This purpose can also be detected in Timaeus' account of the month. He claims that the month is not only the period of the moon (its cycle of movement relative to that of the fixed stars), but it includes an extra period up to the point at which "it overtakes the Sun" (39c3–4). Timaeus prefers the lunar month—the time that elapses between one phase of the moon and the next recurrence of that phase—to what is now called the sidereal month, the period in which the moon completes its cycle. Lunar months are relative to the translation of the sun and come closer to fitting as part of a solar year. Archer-Hind ([1888] 1973, 129) and Taylor (1928, 215) suggest that Timaeus prefers the synodic to the sidereal month due to his sheer ignorance of the difference. The text shows this is not the case.

26 This is one of my points of disagreement with Mohr (1985, 36). The plurality of periods is not the "cussedness of the corporeal nature of the phenomenal realm"; periods are numbers we calculate, not to be mistaken for visual phenomena.

27 Taylor (1928, 216) is wrong in supposing that the perfect year is the sidereal day. For an account of the difficulties an astronomer would find in fulfilling the task within Timaeus' resources, see Vlastos 1975, 58 ff.

28 On the definition of the Great Year and the long tradition of its interpretation, see Callataÿ 1996.

calendar Timaeus aims to build, with which we would be able to determine the relative position of all the celestial bodies. It is built after the visual position of these bodies, but it does not coincide with this visual position because the latter is always relative to the sun and the body of sunlight that emanates from it. This calendar is a number calculated after visual evidence. According to Timaeus, it would allow us to anticipate what we will be able to see in the sky in a very distant future, and to tell what the sky looked like in a very distant past.[29]

Before I proceed, I shall add a brief note about the period of the fixed stars, which, as I said before, is explained by the motion of the same but not only by it. Timaeus is convinced that their *period* of the fixed stars would build a good cosmic calendar (39d6–7, 40a7–b5), but he is very clear that doing it takes more than simply looking at them. Here is why: Timaeus had previously stated that the motion of the World Soul applies to the whole world (36d9–e5). This leads to the assumption that the movement of the same is not restricted to the fixed stars, but is a motion of all the celestial bodies. The particularity of the wandering bodies is that the different imposes on them another trajectory. If this is so, our astronomer on Earth, who sees the constant movement of the fixed stars, must also have a motion relative to them. If this were not the case, he would not perceive any motion, for the Earth would move along the fixed stars according to the motion of the same.

As Martin (1841, II: 88) spells out, and Timaeus explicitly attests (40b8), the Earth has its proper countermovement to the same.[30] This is the Earth's contribution for producing local night-and-day (40c1–2).[31] Therefore, in Timaeus'

29 Bodnár (2021, 118-126), whose paper unfortunately was available to me only after this one was already sent to the Press, acknowledges both the regularity of the periods of the Great Year and its dependence on the presence of the Sun. He also sees that revolution of the circle of the same gives us the "sidereal day" and that the night-and-day generated by the sun gives us the "solar day". I was very glad to know that we reached to these same conclusions independently. He of course does not link the concepts of light and time as I suggest here. Because he also claims that Timaeus' astronomy is observational, I would love to know more about the extent of our agreement.

30 Earth's position relative to the sun explains the solar day and night, and its position relative to the fixed stars explains the sidereal day and night. Burnet's reading of *illomenēn* (oscillating) instead of *heillomenēn* (coiling round, see Rivaud 1925, 155) at 40b8 is correct. It does Timaeus justice by rescuing him from an inconsistency that later traditions read into the manuscripts—for they had an interest in doing so. Aristotle (*Cael.* 2. 293b30–32) and Theophrastus (apud Plutarch, *Quaest. Plat.* 1006c) attest that Timaeus endorsed the doctrine of the revolving earth. See also Taylor 1928, 226–39 and Cornford 1935, 120–34.

31 Vlastos (1975, 35, 100–101) acknowledges two standards required for defining a day. He says that the stars are "celestial chronometers" because of the invariant periodicity of their movement, and that "the sun's contribution is outstanding" for providing us with a "perspicuous measure of all the heavenly motions" due to the alternations of light and

view, what we call today a sidereal day on Earth is a relative movement: the motion of the Earth that, countering the motion of the same, allows it to rest in the center of the cosmos and the observer here to perceive the motion of the fixed stars. The apparent movement of the fixed stars is not the movement of the same, because every movement in the cosmos is relative. The motion of the fixed stars is, nonetheless, the visual evidence of the motion of the same.

I expect to have shown that there is a difference between visible motion – grasped by opinion with perception – and number or period, which results from calculation. They are connected in such a way that one calculates the number or period after the visible positions, i.e., positions relative to the sun. I also believe it to be clear by now that the number, the Perfect Year, is a proportion that explains the movement of the whole world. It is a natural law and a main object of cosmological investigation.

This distinction is also important for dismissing an ancient objection that says Timaeus confuses the measure with what is measured in his account of time.[32] The expression "the number of time" (39d4) is evidence of the difference between number (the measure) and time (measured by the number, see *kat' arhithmon kykloumenou* at 38a7–8).[33] In the next section I provide arguments for this distinction, claiming that time is the visible motion of the heavenly bodies or, to be more specific, the movement of the body of sunlight in the universe.

5.3 Time and Sunlight

This section is devoted to explaining Timaeus' account of time. It takes a backward approach. I begin with inferences Timaeus makes from his definition, and I reconstruct them back to the definition itself. I do so for a methodological

darkness. In the appendix he claims that Plato is content with overlooking (not denying) the distinction between the sidereal and the solar day. I see the text otherwise: Timaeus clearly states the importance of both the cycle of the sun and the cycle of the fixed stars in determining a day, and he does so by insisting on the notion of relative movement.

32 See Proclus, *In Ti.* 3.20, 1–5; Mohr 1985, 59.

33 In arguing against the linear view of time, Brisson (1998, 392) claims that it "occurs once for all," marking the temporality of the instant. I do not see textual evidence in the *Timaeus* for that. Instead, I do see plenty of evidence that time is not linear because it is cyclical. This means that for Timaeus, time is still determined by the "arrow of time," but not by the "increase of entropy" we usually associate with it. Cyclical time is rather associated with the maintenance of the balance. I think Callahan is more to the point in claiming that time is the course of these bodies in their totality (Callahan 2013, 21).

reason. In section 5.1, I made an effort to show that Timaeus' cosmology is grounded on observation, i.e., it postulates concepts to explain perceptual data. If I am correct, Timaeus' definition of time offers a concept from which he deduces the explanation for these data. My backward approach is an attempt to reconstruct the theory in the order of knowledge.

Before I proceed along these lines, I would like to make some brief remarks about the Greek word *chronos*. Its translation as "time" is ambiguous: time can be the interval between two events or the duration of that interval; it can also simply denote the position of one of these events in an infinite series. *Chronos* does not have these same meanings. In its most ancient use—which remains in the later development of the term—*chronos* means "duration of a wait," in general a long one. The most common expression is "a lot of time" and the unit used to count it is one day.[34] To this meaning can be added the notion of a "direction"—or what we call today the arrow of time—so that it is always in motion from the past toward the future.[35] Duration entails a certain extension of time; extension makes different durations comparable, and, if a unit is established, each of them can be measured. Direction, in this archaic sense, entails alteration. Together these notions result in a notion of time that entails change within some stipulated boundaries. We have good reasons to assume that *chronos* before Plato is not a formal concept, such as an interval or a point in a series.[36]

With this contextual note, I begin with the list of three benefits that, according to Timaeus, we acquire from celestial observation: "But now the *sight* of day and night, of months and the revolution of the years, the equinoxes and the solstices have (i) contrived number, and (ii) have given us the intuition of time and (iii) the inquiry into the nature of the universe" (47a4–6, my emphasis). The first point was made in the previous section: because we see the movement of the stars, we can calculate their movement relative to the body of sunlight and finally establish a calendar, the "number." The last point was made in the first section: cosmology is based on observation and has light as its axiom.

The second point is new. It comes, however, in a very concise sentence: sight gives us the intuition of time (*chronou ennoia*). A first note to be made is that we should still keep in mind the difference between number and time; after all, the intuition of time and the number of time are two different benefits in

34 See Fränkel 1955, 1–2, 5, 10; Eggers Lan 1984, 19–21.

35 See Fränkel 1955, 11, 14; Eggers Lan 1984, 24–26.

36 This certainly does not entail that a more formal approach to time was not to be found in philosophical tradition before Plato, in particular with certain uses of the verb "to be". My point refers simply to the uses of the term *chronos.*

Timaeus' list.[37] Intuition is an intellectual grasp of something, which, as the passage states, is formed after a perceptual input. An intuition is therefore a case in which the two parallel capacities we saw in section 5.1, perception and intellect, interact. In this context it matters that sight is taken here as metaphorically applying to objects like days, nights, months, in sum, periods. It must be a metaphor because Timaeus is adamant about every perception being a case of contact with some basic body[38]—light and its colors, in the case of vision. If so, we should not expect these periods to be the number of time, an intellectual concept based on calculation, or simple sense data. This is why I assume that the intuition of time is a notion inferred from sense data, such as the motion of the sensible bodies.

If I am correct, the idea is that we can compare our visual data of moving stars at different moments and have intellectual evidence that there are periods for this motion. The most coherent reading of the text turns out to be that the intuition of time is the acknowledgement that there are periods in the movement of the stars. So (ii) is a condition for (i): because we see the stars, we have an intuition of their movement; thereafter we may calculate the number and define mathematically the pattern of these periods.

As a result, the genitive in "of time" must be understood as a subjective genitive, meaning that time gives us the intuition, and is therefore a fact of the world, instead of an objective genitive, meaning that time is its content, and therefore a result of our intellectual activity subsequent to the perceptual data. Support for this interpretation comes from Timaeus' statement that days, months, years, and so on are parts of time (37e1–3), which came into being simultaneously with the sky. Thus, when Timaeus is talking about time and periods, he is referring to a cycle inscribed in the universe. I conclude that the intuition of time is a mode of apprehension of the movement of generated items in the world that is based on perception, although not a perception itself. This suggest that time is what is apprehended by its intuition, i.e., "the *sight* of day and night, of months and the revolution of the years, the equinoxes and the solstices", as quoted above.

37 Taylor (1928, 187) says time is clock-time, free from all the defects of our actual timepieces. Mohr's concept of time as a clock also follows this very formal account, since he insists on the intricacy of the system and the difficulty in unifying this clock (see Mohr 1985, 57). A clock is a visual measure: it is both light and number, and this does not fit with the distinction Timaeus is willing to make. I suggest that in the *Timaeus*, time is always the motion of light measured by the number we calculate.

38 Sight requires fire (45b2–6, 67c4–7), touch requires earth (31b5), taste requires earth (65c6-d4), and sometimes water and air (66b1–3), smell requires earth with water or air (66d4–8), hearing requires air (67b2–5).

As a result, time would be the sight of all these perceived periods of different heavenly bodies. As we know, such periods are all relative motions, determined by the position of these stars relative to the Sun. Time depends on these visual positions. If so, this explains why the Sun, the Moon, and the other wandering stars are said to have been created in order to mark the number of time and to keep it (38c5–6): their visible position shows the parts of time. This also explains why the fixed stars are the instruments of time (41e5; 42d5):[39] they function as a visible standard of the movement of the same. Stars offer visual marks that render the movement of the world visible: because we see the marks, we can calculate the number of the cycles.

The implication between time and motion seems to hold for Timaeus' account of kinds of time. He says that " 'the was' and 'the will be' are the generated forms of time" (37e4). The text is very obscure, but things get even dimmer if we employ our notion of "verb tenses" to enlighten it. In the first place, this is because the present, being a verb tense, is not a kind of time,[40] and secondly, because Timaeus explains that " 'the was' and 'the will be' are properly said of "the generation that goes on in time, *for* they are motions" (38a1-2).[41] "The was" is a motion, for it denotes the transition from a previous state of being the case to a posterior state of not being the case. "The will be" is a motion, for it denotes the transition from a previous state of not being the case to a posterior state of being the case. These are the two mutually exclusive and basic motions that we attribute to things that are in generation: they are ceasing to be and becoming.[42]

39 At 41e5 *chronos* is in the plural and at 42d5 in the singular. I understand that the difference is simply between a distributive sense, in the former case, referring to the movement of light in different places, and a collective sense in the latter, meaning the sum of all periods (see also Thein 2021, 103). The genitive "of time," attributed to the "instruments," is subjective; it may be compared with 38e4 and it means that they are producers of time.

40 The consecrated formula for verb tenses is τά τ' ἐόντα τά τ' ἐσσόμενα πρό τ' ἐόντα (see Homer, *Iliad* I, 70). Mistakenly supposing that this was implied in Timaeus' parts of time, Cornford concluded: "Time is essentially divided into the three 'forms,' past, present and future" (Cornford 1935, 102). Timaeus is refusing the verb tenses approach in order to associate time with change.

41 Owen (1966, 332–34) noticed that the present was not a part of time and concluded this to be evidence that Plato was committed to a notion of a tenseless present. It is undeniable that the passage commits Timaeus to a strict notion of the verb to be, but this is not about the tenses, it is rather about the contrast between *gignesthai* and *einai*. See also Sorabji (1983, 67, 70) and Cherniss (1957, 20–23), who comment on a previous paper by Owen (1953).

42 As we saw in the first section, things in generation are corporeal entities in a constant process of change (28d5–c2, 31b4–5, 38a5–6).

Emphasizing the connection between time, motion, and visibility is important for neutralizing two classic objections against Timaeus: that the world must have come to be in a moment of time,[43] and that the pre-existence to the world of some matter would imply the pre-existence of time.[44] Both these objections suppose a more "formal" concept of time—the first implies the notion of time as a measure, the latter the concept of time as the law of succession, and for Timaeus *chronos* is neither. What is it then? We finally get to the notorious definition of time:

> The nature of the living being happens to be everlasting, and this cannot be totally conveyed to what is generated. He then planned to make a moving image[45] of the everlasting, and, while simultaneously ordering the world,[46] he makes of the everlasting that abides in unity an everlasting image that moves according to number and this[47] is what we call time. (εἰκὼ δ᾽ ἐπενόει κινητόν τινα αἰῶνος ποιῆσαι, καὶ διακοσμῶν ἅμα οὐρανὸν ποιεῖ μένοντος αἰῶνος ἐν ἑνὶ κατ᾽ ἀριθμὸν ἰοῦσαν αἰώνιον εἰκόνα, τοῦτον ὃν δὴ χρόνον ὠνομάκαμεν - 37d5–7)

"An everlasting image that moves according to number": as we should expect, the definition keeps time and number distinct and attributes movement to time. It also introduces two other concepts: "everlasting," *aiōn*, and "image," *eikōn*, which I shall now analyze.

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43 See Aristotle, *Physics* VIII, 1, 251b17. For a similar view, see Cornford 1935, 102, for the general debate see chapter 4 in this volume.

44 It is precisely because time is not an order of succession that Timaeus is not at fault for saying that *before* the world was created, there was disorderly motion. See Vlastos 1939, 74 ff.; Mohr 1985, 60; 1986, 40; chapter 4 in this volume.

45 This is an Ionian and not an Attic expression of the accusative of *eikōn*. It does not happen elsewhere in Plato. It would require a feminine adjective, but *kinēton* is either masculine or neutral.

46 Brague (1982, 46) defends that *ouranon* is the object of both *poiei* and *diakosmōn*, and *eikona* is in apposition. The solution for the syntax seems too artificial and there are no compelling reasons to sustain it (see Johns 2014, 9–10).

47 I disagree with the suggestion that *touton* shall refer to "number" instead of "image" (See Brague 1982, 66; Wilberding 2016, 26; Thein, 2021, 96-97). Thein ends up postulating two dimensions of time in the *Timaeus*, one as number, the other as changes of particular bodies, while claiming that the latter is the proper image of eternity (Thein 2021, 98-99). I think that the traditional reading of *chronos* as image avoids this duality. My reasons for keeping number and time distinct are: (i) the meaning of *chronos* as something that lasts; (iii) the clear distinction stated at 47a4–6; (iii) the parts of time as motions at 38a1-2; (iv) the expression "number of time" (39d4); (v) that the cyclic movement is according to number (38a7–8).

One cannot fail to notice the emphasis on the noun *aiōn* and the adjective *aiōnios*: (the) everlasting. In pre-classical Greek, the noun means the life of someone, the force of life, the indeterminate duration of an individual life, or the sum of the duration of all individual lives.[48] There are no pre-Platonic occurrences of the adjective. One is therefore forced to define the meaning of the adjective from the interpretation of the passage itself. The text begins with the nature of the living being, which is described as everlasting, because, as previously pointed out (37d3–4), it is eternal (*aidion*).[49] The property of "being everlasting for an eternal being" is incompatible with "being everlasting for a generated being," because in this case everlasting means only indestructible (instead of never generated). Since "everlasting" is compatible with generation (see 38b8–c1, 39d8–e2),[50] this is how time came to be: a motion that shall not cease.[51] This "everlasting generated entity" is intrinsic to its order (see also 38b6–7).

Interpreters tend to emphasize the comparative meaning of the term *eikōn*, namely, "something like an original but different from it," so they translate it as "likeness."[52] I would not dispute this meaning; after all, the argument regarding *aiōn* and *aiōnios* just mentioned implies this *similitude*. I would simply like to add that *eikon* is something that moves, not a likeness in the sense of the result of an intellectual operation of comparison. This is the reason why I insist on the word "image," which is a likeness as a visual entity, a likeness with matter. As I tried to argue in the first section, being seen is methodologically central to Timaeus' cosmology. The world he is talking about is an image because it is generated, and it is generated because it is seen, and if it is seen it must have a body. If these are the principles of his science, *eikon* must mean visible image.

48 See Festugière (1971, 257, 260), for whom it is the latter meaning that connects the term to the notion of "eternity," as developing from the indefinite duration of all lives; Degani (1961, 13–14), for whom no common ground can be found between the ancient meaning of "life" and the later meaning of "eternity"; and Keizer (2000, 54–56), who suggests its meaning is always "the whole of time", which allows for the shift between "the duration of a life" and "the whole duration of eternity."

49 *aiōnios* is not a synonym of *aidion* for the nature of the living being (as for example Degani [1961, 80] and Johns [2014, 8] claim), but rather a property that is analytically ascribed to it: everything that is not in time (see Mohr 1985, 73) is everlasting. But the property of being everlasting can also be ascribed to things in time, i.e., those that will not be destroyed. Olympiodorus' classic distinction between *aiōnios* and *aidion* (Olympiodorus, *In Aristotelis meteora commentaria* 146, 16–27) is based on inferences from this passage and cannot explain how something *aidion* is also *aiōnios*, which is Timaeus' first premise.

50 See Mohr 1985, 71; 1986, 43.

51 See Owen 1966, 334.

52 For instance, Mohr 1986, 39; Brisson 1998, 129; Broadie 2011, 34.

Time is a mobile image and, just like the world, it is something seen, to be more specific, it is the motion of the body of light that connects the Sun with everything else in the universe.[53]

Chronos is, therefore, the visible spectacle of the dance of the heavenly bodies (39c3–d5). The visible movement of the stars is not the movement of the world, for, as we have seen, being visible identifies it with the movement of all the stars relative to the sun. Because the sun is also in motion, the body of light establishes one set of visible things at each moment, this set is constantly moving. Time is this evolving picture of all the visible heavenly bodies, after which we calculate the number of cosmic night-and-days, and after which we can identify the perfect year and the world calendar.[54] This visible mobile picture is the unified body of light connecting the Sun with all the visible objects in the world.

5.4 Conclusion

I argued that Timaeus' cosmology is grounded on the visibility of the world; one of its axioms is the presence of a continuous and mobile body of light in the world originated from the Sun. I pointed out a flaw in the argument regarding our vision in the absence of sunlight. Timaeus nonetheless insists on explaining visibility as the presence of the continuous body formed by sunlight and the light of visible objects. I showed how this concept of visibility allows him to distinguish cosmic night-and-days as temporary positions relative to the Sun. This imports some refinement to Timaeus' concept of day: he is aware that neither a solar nor a sidereal day would work as the unit for the calendar he would like to build, for they are all place-dependent. A calendar that would allow us

53 This is how I understand Timaeus' claim that the world is an image (29b2): the visual evidence for which one provides likely explanations, in the absence of the knowledge of the intellectual model that explains the image (τοὺς δὲ τοῦ πρὸς μὲν ἐκεῖνο ἀπεικασθέντος, ὄντος δὲ εἰκόνος εἰκότας ἀνὰ λόγον τε ἐκείνων ὄντας·[29c1–2]). The method is to provide the best rational explanation for what we see, and not to provide the best explanation for "a likeness of something else" (as Broadie [2011, 34] claims). The image/original relation is between a visual phenomenon and its explanation, and not between a rational construction of the visual phenomena and its explanation.

54 This is an important remark for understanding another Platonic definition of time: "Time is the movement of the sun, the measure of the displacement" (Χρόνος ἡλίου κίνησις, μέτρον φορᾶς. [Plato, *Definitions* 411b3]). Interestingly enough, it comes between the definition of the sun as the heavenly fire that makes the day visible, and the definition of the day, as the trajectory of the sun from dawn to dusk.

to know the position of all the heavenly bodies must take this intrinsic feature of our observation into account. It begins with determining the periods of all the heavenly bodies in relation to the sun. This basic unit structures Timaeus' calendar and is called the Perfect Year. The Perfect Year is the number of time, but not time itself. Time is a motion whose recurrence incites us to calculate the number it follows. It is the motion of all the heavenly bodies as we can see them, as they move relatively to the sun. As such, time is the movement of the body of light, that connects visible objects to the sun.

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CHAPTER 6

Eternity, Instantaneity, and Temporality

Tackling the Problem of Time in Plato's Cosmology

Silvia De Bianchi

6.1 Introduction: Can Time Arise from Durationless Atemporality?

In his 1974 work *Time and the Timeless in Greek Thought*, Kolb suggested a way of presenting the problem of temporality and atemporality in Plato that I do not find satisfactory in its implications and assumptions. The central problem analyzed by Kolb (1974) can be presented as follows: Plato must explain a transition from the Forms to concrete becoming in time, but, as Aristotle noticed (*Metaphysics* 991b10–993a10), this transition fails because any timeless happening only defines a mathematical pattern of order, but certainly not its application and effectiveness in the sensible world.[1]

In fact, Plato's concept of atemporality in turn is far richer than normally expected and a deeper analysis of the meaning of atemporality is needed, especially in reconstructing his cosmogony and cosmology. I claim that it is misleading to equate atemporality only with eternity[2] and that there is more than one type of atemporality, i.e., timeless eternity and non-durational eternity.[3]

1 It is worth mentioning that Aristotle's criticism of the Pythagoreans was similar, in that for him they generated every pattern of order from the Unit and the Unlimited, and this generation was a temporal process involving spatialized units (see *Metaph.* 989b29–990a32 and 1083b8–23). In this contribution I try to show that things are more complex and that what Plato seemed to have in mind when grounding the generation is a special kind of atemporality, i.e. instantaneity.

2 Whittaker (1968) reconstructed how *aei* was used by Plotinus with reference to non-durational eternity and clarified that Plotinus and Proclus assumed that Plato used the term in this sense. However, Proclus' thesis, according to which Plato attributed a sense of non-durational eternity to *aei*, would not be substantiated. According to Whittaker, the notion of non-durational eternity was not a commonplace in Plato's day.

3 If we assume, in agreement with Cherniss (1944, 212) and Vlastos (1965, 379–99), that *aiōn* means non-duration with respect to the paradigm but duration when associated with time, eternity can thus certainly be determined as timeless eternity in opposition to temporality. However, it is perfectly possible to think of a durational eternity, an everlasting or unbounded eternity. Even if Plato is not discussing in the *Timaeus* the thesis that the Forms could be in time but unchanging, it is clear he thought that it was possible to think of durational and non-durational eternity.

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Furthermore, I claim that there is a way of defining atemporality independently from the meaning that we attribute to eternity and this type of atemporality is instantaneity. I argue that instantaneity, as a specific form of atemporality different from eternity, justifies atemporal transitions between opposite pairs of predicates attributed to the same subject by implying a sudden change or switch and lies behind any understanding of generation (*to gignesthai*). The problem of transition from opposites, e.g. Being or not Being is the oldest one in Greek thought and can be clearly identified in Parmenides' fragments (Fr. 8, 5-10). It did not simply regarded conceivability of something springing out of its opposite, but also the problem of effective generation. Therefore, regarding the problem of transition from atemporality to temporality, which is typical of Western cosmology, any cogent account of Plato's *Timaues* must inevitably lead to reject the idea that the generation of time is temporal, as for instance von Leyden (1964) argued. I suggest, in fact, that if temporality is generated from atemporality, this passage must rely on a ground that is not continuous; therefore, it is from non-durational atemporality that time emerges, but this non-durational atemporality is not eternity since what should be explained is precisely the transition from eternity to temporality in the generation of the physical world. In other words, in his cosmogonic account, Plato did not conflate atemporality with eternity,[4] nor duration with time.[5] On the contrary, Plato's *Timaeus* offers a far richer view of atemporality—at least, richer than ours—that also emerged in other dialogues and represents a fundamental improvement with respect to the Parmenidean picture.

Sattler (2019), for instance, suggested that Plato's *Parmenides*, in which the notion of *exaiphnes* is presented and discussed, can be seen as contributing to the development of temporal and spatial conceptualizations in ancient Greek thought. Even if Plato's *Parmenides* does not contain any explicit cosmological account, it discusses fundamental notions that play a relevant role in the Platonic cosmology and in the *Timaeus*, in particular.

Thus, to justify a transition from the Forms to the sensible world a more complex connotation of atemporality is needed and it includes at least the

4 For a discussion on eternity and temporality, see Sorabji 1983, 108–12 and Whittaker 1968.

5 However, the evidence from the *Timaeus*, as we shall see, is just that the parts of time possess duration, and not that time *per se* has a specific one. A particular interpretation of *aiōn* and *diaiōnia* (*Ti.* 38b) can even suggest that time is non-durational, once we assume that its continuity is the result of the continuous, circular heavenly motion: its continuity could be an illusion, or a property "transferred" to it from a more complex process. In other words, the transition from atemporality to temporality is guaranteed by the fact that both the apparent continuity of time and the planetary motions are based on a unit that is out of temporality, a number.

non-temporal notion of the *exaiphnes*, as well as an atemporal notion of eternity. Although the term '*exaiphnes*' does not explicitly appear the *Timaeus*, it represents a useful tool for thinking of the transitions in the cosmogony, e.g. from pre-cosmos to cosmos, from atemporality to temporality and for enriching our understanding of the demiurgic agency and the function of the *chōra*.

In order to accomplish this task, I shall first investigate the link between Plato's strategy of portraying time as connected to planetary motion in the *Timaeus* and the toy models that he uses in other dialogues (sections 6.2 and 6.3) to show the relevance of his reflections on atemporality and instantaneity in the *Parmenides* (section 6.4) for the elaboration of his definition of time in the *Timaeus*. Then I will show the impact of Plato's notion of instantaneity on the definition and ontological functions of the Demiurge and the Receptacle (section 6.5).

6.2 Fixing the Moving Image of Eternity

Let us begin with one of the most commented upon passages of the *Timaeus*, to scrutinize some interpretations that can throw light on the interplay of temporality and atemporality in Plato's cosmogony and cosmology:

> So as that pattern is the Living Being that is for ever existent, he sought to make this universe also like it, so far as might be, in that respect. on the generated thing. But he took thought to make, as it were, a moving likeness of eternity; and, at the same time that he ordered the Heaven, he made, of eternity that abides in unity, an everlasting likeness moving according to number—that to which we have given the name Time.
>
> *Timaeus* 37d1–5[6]

This passage has been object of many interpretations for centuries, yet its meaning is far from clear. Recent contributions meant to clarify Plato's cosmology focused on the notions of *aiōn* and *aidios*, with emphasis on the meaning of *aidios*, "which applies not only to what simply is eternal, but also to what came to be but will not perish" (Thein 2020). However, to identify the exact meaning of these terms is not the only trouble associated with this passage. I want to draw attention on the expression "according to number" (*kat'arithmon*), which is ambiguous, and worth being analyzed if one wants to advance

6 Quotations from the *Timaeus* are taken from Cornford's (1952) translation.

in the determination of the role of instantaneity in the *Timaeus*. Indeed, it can be interpreted in three ways, at least i.e. 1) "according to the notion of number in general"; 2) "according to the rules of numbers", or 3) "along the number series".[7] There are three possible scenarios open at this point. In the first scenario, number means unit as a standard in general. In other words, this is nothing but a metaphor that helps us in thinking of the analogy between time and eternity or the likeness of the two through the concept of unit: both are units, but one is at rest and the other is moving. This allows us to grasp the operational function of time moving relative to something quiet and inert.

The second scenario is more interesting and can be connected to the second part of the abovementioned passage referring to the distinction of the parts of time:

> For there were no days and nights, months and years, before the Heaven came into being; but he planned that they should now come to be at the same time that the Heaven was framed. All these are parts of Time, and 'was' and, 'shall be' are forms of time that have come to be; we are wrong to transfer them unthinkingly to eternal being. We say that it was and is and shall be; but 'is' alone really belongs to it and describes it truly; 'was' and 'shall be' are properly used of becoming which proceeds in time, for they are motions. But that which is for ever in the same state immovably cannot be becoming older or younger by lapse of time nor can it ever become so; neither can it now have been, nor will it be in the future; and in general nothing belongs to it of all that Becoming attaches to the moving things of sense; but these have come into being as forms of time, which images eternity and revolves according to number.
>
> *Timaeus* 37e1–38a6

If we interpret the expression "according to number" as meaning "according to the laws or rules of numbers," then we have a clear reference to the foundations of mathematics being intrinsically connected to time:

7 Notice that in the fourth century BC, to associate time with the preposition kata was to designate a particular calendar. For instance, *kata theon* or *kat'archonta* were expressions used to designate events in time corresponding to an epoch rather than a year, in the first case according to the lunar calendar and in the second to the Prytany calendar; see Pritchett and Van der Waerden (1961, 21) and discussion below in this section. The third option according to which one renders *kata* + acc. in a distributive manner is more plausible because it accounts for the term *arithmos* used in singular to be contrasted to *arithmoi* in plural that does not appear in this important passage.

There will always be an *n* greater than, equal to, or less than X.

According to this simple, fundamental rule, one can divide time into portions or units responding to past (less than), present (equal to), and future (greater than); albeit arbitrary, these distinctions respond to universal rules and are grounded in the analogy between number series and time series. In particular, the lunar calendar used in Attica during Plato's time responds to this rule, as shown by Hannah (2005, 42–70).[8] According to the lunar calendar the year, as well as each month, started with New Moon or Noumenia, the tenth day as the tenth of the month waxing, the twentieth as the earlier tenth, the twenty-first day of the month was named "later tenth" and the day before the New Moon was called "Old New Moon."[9] The lunar calendar included ten months in a year, leading to a maximum of 304 days (see Allen 1947, 164) and was therefore subject to adjustments that could lead to its harmonization with seasons and thus with the solar calendar and the Prytany calendar, which counted dates according to the ten Prytanies of each *assembly*, containing 366 days (months one–six, made up of thirty-seven days, and months seven–ten, made up of thirty-six days). Both the lunar and Prytany calendars had only ten months (see Pritchett and Van der Waerden 1961, 18–19).[10] Furthermore, we know that in between

8 See also in the present volume, Chapter 5, section 5.2.

9 Notice that the Eleusinian Mysteries started being celebrated on the Old New Moon day and were adopting a lunar calendar.

10 See Pritchett and Van der Waerden (1961, 26–27). They suggest that the existence of an observational calendar for a very early period is proved by the terminology used by the Athenians to designate the days. They called the first day "new moon day" and the days from the first to the tenth (inclusive) they invariably referred to as "days of the waxing moon." The days from the twenty-first through the twenty-ninth were called the "days of the waning moon." The calendar had an empirical and observational basis, it was tied to the phases of the moon, and expressed the days in terms of these phases. In the period of Solon, Diogenes Laertius (1.59) reports that the Athenians had "to observe the days according to the moon." Plutarch, *Solon* 25 (Perrin 1914) reported: "Observing the irregularity of the month, and that the motion of the moon does not always coincide with the rising and setting of the sun, but that often she overtakes and passes the sun on the same day, he [Solon] ordered that day to be called the Old and New, assigning the portion of it which preceded the conjunction to the expiring month, and the remaining portion to the month that was just beginning. He [Solon] was thus the first, as it would seem, to understand Homer's verse, which speaks of a day when 'This month is waning, and the next is setting in,' and the day following this he called the first of the month. After the twentieth he did not count the days by adding them to twenty, but by subtracting them from thirty, on a descending scale, like the waning of the moon." In the fifth century BC, Aristophanes (*Nubes* line 626), makes reference to the fact that the untampered calendar was "according to the moon". Finally, in Aristotle (*Ath. Pol.* 43.2), we find a statement showing that in

Solon's government and Aristotle's works, the lunar calendar was endorsed in Attica (Pritchett and Van der Waerden 1961, 27), something that fits nicely with the opening of the dialogue in which Timaeus narrates the story of Solon's trip to Egypt and mentions its importance for the social and political life of Athens.

The third scenario, which derives from interpreting the expression *kat'arithmon* as "along the number series, or along the all of number" leads to the following interpretation of the passage: time, understood as unit mirrors eternity which abides in unity, but in contrast it also moves along the number series, assuming different values at different points and this motion generates further divisions of time itself and the cosmic cycles can be counted because a specific position of the planets can be associated to each unit of time and to a number that correspond to that position at a specific point of time. It must be noticed here that this scenario responds to the need of representing the sameness, i.e. the unity in the multiplicity, i.e. the number series, and therefore to the need of embodying in the physical world the Form of the Same and the Different that the Demiurge uses to forge the sphere of the World Soul. By adding to this the previous remarks on the type of lunar calendar used in Attica and considering the relevance of Pythagorean doctrines for calculating sidereal cycles and seasons, it is not implausible to assert that the passage in *Ti.* 37d is clearly multi-layered and that there is room for the co-presence of more possible scenarios.[11] As Finamore and Dillon (2002, 362) emphasize, we find in Iamblichus'

the fourth century the Athenians regulated the calendar by the moon, meaning that each archon's year began with a new moon.

11 A fourth possible scenario could be generated by reading *kat'arithmon* as "according to a specific number" and in interpreting it as being the Decad, thereby tending to endorse an exegesis of the passage in *Ti.* 37d as connected to the Pythagorean tenet that the Decad contains in itself all the laws of numbers (scenario two) and was also considered the supreme unit of the world, being the condition of all number series (scenario one and three). However, to equate Plato's late theory of numbers and Pythagorean doctrines is problematic, but if one endorses the proposal to translate *kat'arithmon* with "along the all of number" or "along all of number series", this is not at odd with the translation of the term aiōn which could be interpreted as the Eon, the number ten. See Iamblichus, *Theologumena Arithmeticae* 79-87. See also Brisson (2012, 43–44), translating Iamblichus: "The Pythagoreans also always assimilated mathematical knowledge, in absolutely all cases and in each in particular, to true beings, to all the gods, to the dispositions and powers of the soul, to the celestial phenomena and the orbits of the stars, to all the elements of bodies in becoming and the things that are composed from these elements, and to matter and all things that come to be from it, taking their proper images with regard to each of these beings, both all of them in general and from each one. They traced mathematical objects back to the genuine beings, either because they have the same account in common, or through a dim impression, or because of a resemblance, very close or very distant, or because images feature a resemblance with their model, or because the model plays the role of cause that precedes its effect, as is the case for a

Commentary on the Timaeus, fr. 29 and fr. 64 the reading of *aiōn* as eternity and as Eon. Iamblichus associated eternity with properties such as uniformity, infinity, simultaneity, and permanent presentness. Thus, the passage in *Ti.* 37d would assume a specific meaning according to which the planetary motions tend to imitate the perfection of eternity by means of a periodicity that is given by their relative positions and their values are always contained in the number series and therefore in number ten. The interpretation of *aiōn* as deeply related to the Decad is an old and important one, but by no means it implies to read the whole dialogue through the lenses of Pythagorean doctrines.[12]

For the time being, I tend to consider the expression *kat'artihmon* without meaning if not further determined with respect to the expressions *en eni* and *iousan*. Therefore, I am inclined to render it with "along the number series" in contrast with the fact that eternity abides in the One or in unity, since it correctly describes at least the transient character of time flow. Furthermore, to generate temporality also means to inject teleology into the physical world, e.g., no task can be accomplished in eternity, because it is already there and achieved in a permanent presentness. If eternity is understood, as Iamblichus suggested, as the Monad or the One, then it is worth comparing Plato's view of atemporality in the *Timaeus* with the perspective presented in the *Parmenides* because it is clear that the problem of the transition from the eternal world of Forms to the physical one can be overcome to a certain extent with the intervention of the demiurgic agency and with the shaping of the World Soul, but still the metaphysical problem of the foundations of the transition from atemporality to temporality is far from being solved.

However, before moving on to this in the next section, I want to draw attention to a subtle consequence in assuming a certain reading of the expression *kat'arithmon* as related to Plato's late theory of numbers. Within this picture, time and its parts must derive from the properties of number series through an analogy with change and motion; namely, a unit of time itself is something fixed, it is like an icon, a sacred statue, or, if one wishes, a clock hand that moves around in a circle without deformation or translation. It flows or moves due to a circular motion, by using one of its extremes as a pivot. If we take

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model, or in still some other way. They couple mathematical objects to things in several other ways as well, since things can be assimilated to mathematical objects, and mathematical objects can by nature be likened to things, both being in a relation of mutual resemblance."

12 For Aristotle attribution of the doctrine of the Decad to the late Plato and the early Academy, see Arist. *De an.* 404b19–24 = *De philos*. fr. 11 Ross. See also Zhmud (2013, 328-330).

seriously the definition of time provided in the *Timaeus*, we also detect the need of visualizing and materializing temporality and the universal rules that drive the cosmos, planetary motions, and determine their positions: “To tell all this without using visible models would be a labor spent in vain” (*Timaeus* 40d1–3). As Cornford (1952, 74) and McHugh (2019, 168) have underlined, a reference to an armillary sphere is highly probable, considering that they had been in use in ancient Greece since Thales’ time, including those of Eudoxus of Cnidus. Their functions, however, remain unclear, even if recent studies, such as Freeth, Higgon, Decanalis, MacDonald, Georgakopoulou & Wojcik (2021) throw light on the underlying mechanism and cosmological assumptions.[13]

Whereas the later Archimedes’ sphere was certainly based on a sophisticated mechanism reproducing the periodicity of planetary motions and those motions relative to stars, it is more difficult to assess whether and which armillary sphere Plato had in mind. Furthermore, Cicero already suggested this reading of the passage, in *De republica* I, 14 and *De natura deorum* II, 34 with reference to the *Second Letter* (312d), in which the armillary sphere of Syracuse is mentioned (see also Cornford 1952, 73–75). Even if the letter is considered spurious, albeit of extreme importance,[14] what counts is that it was considered plausible to talk about the presence of an armillary sphere held in Syracuse during Plato’s time. Robert Hannah suggests an explicit link between this type of armillary sphere and Plato’s *Timaeus* (see Hannah 2017, 89–90), thereby fostering the idea that Eudoxus of Cnidus, among other successors, was seeking to embody in an orrery the cosmology and astronomy devised in Plato’s *Timaeus* (see Gregory 2000, 183). The existence of the Antikythera mechanism and the recent discovery of its functioning based on Plato’s cosmology and Babylonian calendars corroborates this hypothesis.

Kalligas (2016), for instance, offers a cogent account reconstructing the type of spheres known in Plato’s time. There are hints not only in Plato’s *Republic* (616c–617a–b), but also in other dialogues that support Gregory’s and Kalligas’ reading. Indeed, the simplified image of the world by means of an orrery is present in the *Statesman* at 270a, in which the Stranger introduces the discourse on the myth of the golden age of Chronos, when the God suddenly

13 They may have been orreries with an educational purpose, but not intended for the general public, more probably, in a similar way as to the Antikythera Mechanism, they were tools for simplifying and calculating the relative positions of the planets and stars, or they may simply have been toy models designed to inspire further research in astrology (see Kalligas 2016).

14 See for instance the discussion in Bluck 1960.

turned the motion of the sun in the opposite direction.[15] The passages in the *Republic* (616c–617b) and the *Statesman* (269d–270a) imply phenomena, e.g. the sudden spin flip of axial rotation, that can be exemplified by a mechanical model or an orrery. It is worth noting that in the *Statesman*, Plato admits that the order of time can be reversed in the physical world and that the order of processes in the sensible world depends on the direction of time flow. Just as if the world could be embodied by an orrery, and an agent could decide to flip the spin of the axial rotation or the revolution of a planet represented by a sphere.

It is very intriguing to establish a comparison between the *Statesman* and the *Timaeus* with respect to the way in which the role of divine demiurgic agency is portrayed and how it affects the representation of temporality and its properties, such as time direction or continuity. What is, however, immutable is the intrinsic link between temporality and physical world, i.e., their simultaneous generation. If we stick to a literal interpretation of the *Timaeus*, we must conclude that the ground of the generation of both the heavens and time is out of time. The problem is that this generation cannot "happen" in an eternal presentness. The passages in the *Statesman* help us in suggesting that the sudden switch of the direction of motion of the Sun can be made conceptually cogent, thanks to the notion of instantaneity rather than temporality.[16] To assess whether this hypothesis could be correct, I shall devote the next two sections to the notion of atemporality, relevant for Plato's cosmogony and cosmology in the *Timaeus* and the *Parmenides*, respectively.

6.3 On Generation of Time and the World

On the grounds of the passages on time and cosmology present in both the *Statesman* and the *Timaeus*, it is worth investigating the implications of the hypothesis that Plato had in mind toy models and orreries not just meant to calculate celestial events but also as symbols helping to visualize the implications of a higher metaphysical order, when approaching the cosmological discourse and the generation of time. The first and most important implication is the central tenet that there cannot be time without the sensible world and vice versa, otherwise the result would be useless, meaningless, and absurd, like

15 See Brisson 2000, 176 ff. The same myth is present in Euripides, *Orestes* 986 and *Electra* 734, as well as in Herodotus (II, 142).

16 On the different types of change and continuous substantial change, see Sedley (2007, 103) and the discussion in Johansen (2008; 2014, 301).

having a clock without a moving clock hand or a stick (like a gnomon) without a background divided in units that works as a frame of reference:

> Be that as it may, Time came into being together with the Heaven, in order that, as they were brought into being together, so they may be dissolved together, if ever their dissolution should come to pass; and it is made after the pattern of the ever-enduring nature, in order that it may be as like that pattern as possible; for the pattern is a thing that has being for all eternity, whereas the Heaven has been and is and shall be perpetually throughout all time.
>
> *Timaeus* 38b1–c2

In Plato's time, the clock was a gnomon projecting shadows (*stoicheia*) on the ground. The stick was fixed, and the projected shadow changed position during the day following the motion of the sun. Now, the interesting aspect of these passages on the generation of time is that we find an apparent conflict between eternity and temporality, i.e., one is at rest and the other moving. However, time's motion is only apparent, because in itself time is both at rest and in motion. This contradiction is an illusion insofar as one distinguishes between relative and absolute motion (*Timaeus* 38e–39a) and assumes a metaphysical and ontological distinction between temporality and eternity. Eternity pertains to an ontological level that is not ours; it is not perceptible, but we can limit its image according to a selection of units in the number series and we organize life on its grounds, e.g., agricultural cycles that in turn respect the cosmic order of planets as a hymn to life.[17] The term *aiōn* in Homer means "spinal cord, place of life," and only as a secondary option can it be translated as "duration of life." Nevertheless, whichever meaning we attribute to aiōn, be it eternity or the Monad, what counts is the fact that it is unique. Time in turn is always divisible, whereas eternity is not; temporality can be perceivable and quantifiable as a way of being of sensible things, whereas eternity is not. Time can be made perceivable thanks to planets, stars, and their motions as if they

17 However, Plato uses terminology that emphasizes the optical imperceptibility of eternity, the impossibility of it being geometrized. This is not the case for its acoustic imperceptibility (think of Pythagoras' legendary capacity to hear the harmony of the sun). An example of the co-presence of intelligible imperceptibility and sensible perception is given by the very same structure of the universe. The celestial vault of fixed stars rotates upon itself but does not change its position and conserves the relative positions: this periodicity of the motion of the fixed stars is common to both the celestial vault and the acoustic waves. For this reason, music is a valid means through which order, regularity, and a principle of conservation can be imposed on the world (see *Ti.* 47c–d).

could be used as an orrery, eternity cannot be directly represented by means of the latter. Furthermore, the celestial vault is organized according to mathematical proportions in order to let animals and living beings learn arithmetic. It is as if we could live immersed in a gigantic orrery that teaches us the ultimate truths of life and numbers:

> And in order that there might be a conspicuous measure for the relative speed and slowness with which they moved in their eight revolutions, the god kindled a light in the second orbit from the Earth—what we now call the Sun—in order that he might fill the whole heaven with his shining and that all living things for whom it was meet might possess number, learning it from the revolution of the Same and uniform.
>
> *Timaeus* 39b1–5

Planets and stars are indeed instruments of time, being at once generated and constituting time by preserving the perfect number of time (*arithmos chronou*), through which it accomplishes its proper scope:

> In virtue, then, of this plan and intent of the god for the birth of Time, in order that Time might be brought into being, Sun and Moon and five other stars—'wanderers', as they are called—were made to define and preserve the numbers of Time. Having made a body for each of them, the god set them in the circuits in which the revolution of the Different was moving in seven circuits seven bodies: the Moon in the circle nearest the Earth; the Sun in the second above the Earth; the Morning Star (Venus) and the one called sacred to Hermes (Mercury) in circles revolving so as, in point of speed, to run their race with the Sun, but possessing the power contrary to his; whereby the Sun and the star of Hermes and the Morning Star alike overtake and are overtaken by one another.
>
> *Timaeus* 38c1–d4

It is worth noticing here that it is the absolute circular motion of the celestial vault of fixed stars that starts first and creates time, but this vault is not the world. The world includes other stars and planets, and the beginning of their motions coincides with the moment in which time comes into being. However, Timaeus remarks that human beings are far from appreciating the perfection of the gigantic orrery, being yet unable to measure all relative motions of planets and stars as well as their synchronization with the motion of the same of

the celestial vault of fixed stars that occurs in the perfect year.[18] What emerges from the text is the idea that the mirroring and imitation of the paradigm's perfection is explicit when the analogy between the universe and the Living Thing is before the eyes of observers. Therefore, the perfection of time as the image of eternity can be witnessed only through its *organa*, i.e., the heavenly bodies, their motions and beautiful disposition. We are now ready to advance the reflection upon the double meaning of time in the dialogue:

(a) It can be a cyclic unity or a continuum to be divided.

(b) It can be something susceptible to an operational definition (time made objective, measurable).

Furthermore, in the *Timaeus*, the present has a double connotation, in that past, present, and future are referred to language, namely to the way in which we *use* time as a parameter or scalar to describe the world and its processes, yet in reality the unit measure of the eternal truth is the "Now" (*nyn*) as presentness (*Parmenides* 152e1–3). Therefore, the Now is different from time; it cannot be part of it. I can identify different "Nows" in time, by arbitrarily dividing it, but I cannot say that time per se is made of "Nows."

The Now is presented as something ontologically different from time, but it is also different from the instant (*exaiphnes*). Thus, whereas the term *chronos* is undoubtedly connoting temporality, the concepts of *nyn* and *exaiphnes* pertain to atemporality. Indeed, the notion of nun is different from the present in that it is also not a part of time, but it can be eternal present when referring to eternity. Purely atemporal is the instant. Plato never portrayed the instant as a part or portion of time and clearly distinguished it from the "Now," whereas Aristotle started to conflate the two, exerting a millennial hegemony over this deeper way of portraying atemporality.

18 The main passage supporting my view reads: "Thus and for these reasons day and night came into being, the period of the single and most intelligent revolution gone round his own circle. The periods of the rest have not been observed by men, save for a few; and men have no names for them, nor do they measure one against another by numerical reckoning. They barely know that the wanderings of these others are time at all, bewildering as they are in number and of surprisingly intricate pattern. None the less it is possible to grasp that the perfect number of time (*arithmos chronou*) fulfils the perfect year at the moment when the relative speeds of all the eight revolutions have accomplished their courses together and reached their consummation, as measured by the circle of the Same and uniformly moving. In this way, then, and for these ends were brought into being all those stars that have turnings on their journey through the Heaven; in order that this world may be as like as possible to the perfect and intelligible Living Creature, in respect of imitating its ever-enduring nature" (*Ti.* 39c1–e2).

6.4 Instantaneity as a Form of Atemporality

In agreement with Whittaker (1968) and Sattler (2019) I tend to read the passage at *Timaeus* 37c–38c as deeply connected with ideas discussed at *Parmenides* 140e–142a and 151e ff., I want to show that it is precisely by considering passages from *Parmenides* 151e ff. that the contrast between *aiōn* and *chronos* becomes perspicuous, and also that the exegesis of Plato's text brings us back a far richer view of atemporality. This section focuses on Plato's view of the instant (*exaiphnes*) as presented at *Parmenides* 156d–157b. In it appears the relevant tenet according to which the Being and the Becoming of the One can be determined through the transition from one state to another or from affections (*pathēmata*) or properties to other affections and properties by means of the durationless instant.[19]

Whereas in the *Parmenides* (155c8–155d4), attention is mainly devoted to the implications of temporal relations (present, past, and future) with the One, at *Parmenides* 156d–157b we are dealing with an argument for the justification of operating a transition from one predicate to another in time. The grounds for this transition are not to be found in something that is in time or susceptible to temporal determination. This condition must be found "out of time," in the instantaneity.

The instant is situated in between Being and Becoming and is a necessary tool for determining the properties of the One with respect to Being. In my view, Plato's arguments point to the fact that there must be some grounds for any transition (155e4–156c6), namely a perspective through which we can account for any sudden transition or non-local switching from one state to another, as well as for the possibility of thinking of opposite predicates within the same discourse and without contradiction. Any condition of a transition of the One, e.g., from one to many, occurs out of time, in the instant, but in turn the instant is the signature of a process of generation or signifies a transition in the physical world that occurs in time. Consider the following passage in which Socrates introduces the problem:

> 'And will the case not be the same in relation to other changes?' 'When it changes from being to destruction [157a] or from not being to becoming, does it not pass into an intermediate stage between certain forms of motion and rest, so that it neither is nor is not, neither comes into being nor is destroyed?'

19 For further interpretations of this passage, see Brisson 1970, 389–96 and Brisson 1977.

> 'Yes, so it appears.'
>
> 'And on the same principle, when it passes from one to many or from many to one, it is neither one nor many, is neither in a process of separation nor in one of combination. And in passing from like to unlike or from unlike to like, it is neither like nor unlike, neither in a process of assimilation nor in one of dissimilation; [157b] and in passing from small to great and to equal and vice versa, it is neither small nor great nor equal, neither in a process of increase, nor of diminution, nor of equality.'
>
> 'Apparently not.'
>
> 'All this, then, would happen to the one, if the one exists.'
>
> 'Yes, certainly.'
>
> *Parmenides* 156e–157b

According to my reading, Plato's view of transition as being grounded on instantaneity is meant to give a definition of generation (*to gignesthai*) and provide a solid foundation for the notion of coming into being and the genesis of new states (*Parmenides* 156e7–157b5). Thus, in my view, in these passages Plato approaches the problem of justifying generation by means of instantaneity, which has a hybrid status: it only explains the possibility and actuality of generation, but it does not deal with the specific products of this generation. Plato's notion of the instant relies on the notion of the *metaxu* precisely because what justifies a transition cannot define the instant through time, whereas the instant signifies the non-place (*to atopon*) where any generation takes place. In this respect it brings with it a sense of absurdity, as famously mentioned in the dialogue.[20] Among the most interesting properties of the instant is non-locality. Indeed, the instant as sudden shift or switch allows us to think of the interruption of a process and the conditions under which a new, different one may arise at any place or nowhere. Furthermore, given the atemporal character of the instant, understood in terms of a durationless thing, a state can pertain to an entity at once, or multiple states as actual possibilities can pertain to one and the same entity at once.

It is only thanks to the temporal dimension or "being in time" of the One that we can apply the principles of identity and of the excluded middle, but in the instant, they seem not to hold. This is the case when one wants to think of two opposite predicates at the same time, e.g., mortal and immortal

20 Cornelli (2010, 46) stresses the fundamental role of the *metaxu* in the *Philebus*: "Per Platone è propriamente quello che sta in mezzo ciò che si presenta come decisivo per la comprensione del mondo. Gli esempi delle lettere dell'alfabeto e della musica non lasciano dubbi sul primato del *metaxu* al riguardo."

or "in motion" and "at rest," without contradiction. Plato's view of transition will consider opposed concepts, e.g., the pair positive/negative, mortal/immortal, by simply enabling the determination of these pairs out of time. Furthermore, this view of transition is meant to consider pairs of opposite concepts, e.g., finite/infinite, living/dead, by leaving room for investigating intermediate stages of these opposite pairs in the continuum of the sensory world. When it is regarded as the result of a continuous process, a transition is referring to physical or mental states of the sensory world. The notion of the instant is what justifies the transition from one state to another or a sudden change of regime (switch, sudden change of direction of a motion), both in the external, physical world and in our bodies (e.g., the transition from pleasure to pain).

The assumption of instantaneity and the durationless is needed to preserve the variety of relationships that involve the partaking of the One in other Forms, but the ontological grounds for a transition from the world of Forms to the physical world passes through an assumption of instantaneity and the *metaxu*. This must occur because, together with the physical world, time is generated, in Plato's view, and this generation must follow from something different to temporality, but different to eternity as well. In this sense there is an indirect connection between eternity and spatio-temporal things, mediated by the instant. The instant looks like a sort of differentiating function or condition for thinking of the transition in the physical (temporal) world and, moreover, in continuous terms. However, there can be another type of transition that is non-local and defines the way in which change can occur in the One, i.e., how its properties can be configured when it partakes of the Being. The instant is again the main actor here; it is the condition for this second type of transition. Indeed, at the most abstract level of Plato's view of transition, the instant also allows him to characterize the inner determinations of the One at once and how it partakes of Being and Becoming without contradiction. This hybrid notion of transition, however, does not lead to the further determination of the properties of the One, but (as in the case of the justification for the transition in the physical world) it is simply a condition for it to take place. From what has been said so far, one can draw important consequences for the interpretation of the pre-cosmic state's representation in the *Timaeus*. In my view, only a specific view of transition and its grounding could coherently explain the passage from the eternity of the Forms and the sempiternal dimension of the soul to the temporal world. Indeed, instantaneity allows the compresence of Intellect, Soul, and world in the act of generation. The interaction between the three has been portrayed in paradoxical terms by Brisson (2016, 49), but as

soon as one admits the role played by instantaneity in grounding any transition, difficulties can be overcome.[21]

6.5 Instantaneity and the Cosmology in the *Timaeus*

At this point in the discussion, we can go back to the *Timaeus* and look at three fundamental questions from a fresh perspective. There are at least three conceptual issues, which are beset by extreme difficulties and represent the subjects of a vast body of literature, that I would like to discuss in what follows. I am not pretending to resolve every obstacle in this article, but I want to reach the goal of showing how the concept of instantaneity offers a stronger and more solid interpretation for understanding Plato's cosmology. Difficulties in interpreting the *Timaeus* are associated with (a) the idea of the generation of time (*Timaeus* 37d), (b) the transient character of the *chōra*, and c) the proto-temporal dimension in which the demiurgic agency takes place. I suggest that one possible way to overcome these difficulties is to consider the role played by a specific type of atemporality, i.e., instantaneity. In order to look at the problem of the genesis of time, consider the following points.

According to the passage at *Timaeus* 37d, the generation of temporality presupposes its opposite, i.e., atemporality, and since there is no time unless planets are set into motion, there is an intermediate step to consider, which is where the transition from eternity to temporality and the proper generation of time takes place. This transition is known only indirectly, through symbol or metaphor, i.e., the moving image of eternity, but ontologically speaking it is made possible thanks to an intermediate stage, the *metaxu*, in which the Demiurge operates according to the Forms of the Same and the Different, the laws of numbers and harmonics that shape the world and give it a spherical form. These "operations" happen all at once, in the instant. Indeed, only in the instant can both identity and difference coexist without contradiction.

21 See Brisson (2016, 49): "In the Intellect, all knowledge is simultaneous and immediate, whereas in the Soul, there is change (*metábasis*) from one element to another, with the reasoning process moving from premise to conclusion. The Intellect is characterized by eternity, whereas the Soul is associated with time, which is engendered simultaneously with the soul: a paradoxical situation, insofar as like the Intellect, the Soul is an eternal reality. The Soul contains in succession and partition all that is found in a simultaneous and compact way in the Intellect, which Plotinus expresses by speaking of "reasons" (*lógoi*) which, in the soul, are equivalent to the Forms."

Furthermore, at this stage, motion does not appear. Projections are not proper physical motions but geometrical operations that the Demiurge performs in the *metaxu*. Only when the complete determination of the structure of the fixed stars is ready can the sphere rotate upon itself: it moves and is always the same because it does not change place and does so at once. Planets and other celestial bodies in its interior start co-moving with respect to both each other and the system of fixed stars (the boundary of the sphere), thereby effectively generating the flow of time, but also setting themselves in time, and they do so at once. Therefore, there is no doubt that the kind of time described in the *Timaeus* is relational. It has an operational definition because it is used to measure the planetary motions, but from a metaphysical perspective, it is by no means absolute, being the result of co-moving reference frames, i.e., the sphere of fixed stars and the orthogonal plane of planetary orbits.[22]

6.5.1. *Atemporality and Demiurgic Agency: Acting at the Boundary*

This interpretation naturally leads to the third point that represents a conceptual difficulty in the *Timaeus*, namely the proto-temporal dimension from which the Demiurge's agency exerts its power. Consider the following passage:

> Now it was not, nor can it ever be, permitted that the work of the supremely good should be anything but that which is best. Taking thought, therefore, he found that, among things that are by nature visible, no work that is without intelligence will ever be better than one that has intelligence, when each is taken as a whole, and moreover that intelligence cannot be present in anything apart from soul. In virtue of this reasoning, when he framed the universe, he fashioned reason within soul and soul within body, to the end that the work he accomplished might be by nature as excellent and perfect as possible. This, then, is how we must say, according to the likely account, that this world came to be, by the god's providence, in very truth a living creature with soul and reason. This being premised, we have now to state what follows next: What was the living creature in whose likeness he framed the world? We must not suppose that it was any creature that ranks only as a species; for no copy of that which is incomplete can ever be good. Let us rather say that the world is like, above all things, to that Living Creature of which all other living creatures, severally and in their families, are parts.
>
> *Timaeus* 30a4–c4

22 It would be extremely interesting to explore the idea that the plane of the planetary orbits could work as a sort of imaginary time in Plato's cosmology.

What is extremely interesting is the proto-temporal and proto-motive function of the Demiurge's agency. What Timaeus describes is an agency that orders the motion of the world. He is out of time but also in a dimension suspended from and not only comprehended within eternity, because he must look at the eternity as a paradigm and must be out of it to imitate it.[23] This interpretation is coherent with the idea that the Demiurge cannot act directly in the physical world, but only though the World Soul embodying the principles that he selected, and the elements that are also contained as shadows in the *chōra*.

The Demiurge must act in some way at the border of the world or from the boundary of the sphere, therefore, in the instant, in the *metaxu*. The proof that he cannot directly act upon the physical world is that he has to teach his "children" how to perform the mixing of elements (*Tim*aeus 42e–43a). Thus, it is often asked, "Where does the Demiurge come from?" or, "Where does the Demiurge go after generating the world?" The answer, in my view is: everywhere and nowhere. He comes from, is, and rests in the *metaxu*. Therefore, his agency is of a special kind: it is an agency able to generate a perfect product, i.e., the best of all possible worlds, but one that is temporal, in the sense that it has a beginning (it could not be beautiful if infinite with respect to its origin, see *Timaeus* 28a–b) and possesses a measurable duration even if it can endure forever. Indeed, there is a powerful religious message emerging from this assumption: the world would be finite and subject to death and decomposition, but it continues, only because the Demiurge acts teleologically in order to preserve it. We are given the possibility of being perfectible, and our souls the chance to return to our stars (*Timaeus* 41e), in order to complete the most perfect masterpiece of all possible worlds, the only and most beautiful self-moving image of life according to the laws of numbers and harmonics: this universe. This means that at the end of the cycle of reincarnations, all our souls being returned to the pre-assigned star fixed on the celestial vault, each soul will be identical with the place (*situs*) on the spherical surface and will partake in the only possible, globally symmetrical motion left to the world: the uniform, circular motion of the three-dimensional sphere of the world.

Thus, the cosmos will partake in the perfection of eternity, it will still possess three-dimensionality, therefore the elements of fire, earth, air, and water will constitute its bonds, yet, being different from both eternity and the third kind, i.e., the *chōra*, the world will be like an enduring Living Thing, a sort of gigantic animal, and it will be in apparent motion only—it will also be at rest,

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23 On the differentiation of the Demiurge from the Paradigm, see Broadie 2012, 27, 243–77.

since it will not change its place (*situs*), being one and the same with the World Soul. The demiurgic agency ensures the presence of beauty and equilibrium in the cosmos and his will ensures the world does not perish and lets living beings accomplish their cycles of reincarnation (92c; see also 41e). To sum up, the Demiurge must be in the *metaxu* because it is from the atemporal dimension that he can design different worlds, e.g., two-dimensional rather than three-dimensional (31a; 32a–b) and in order to ensure a mixing of opposites, he must act out of eternity, but in the instant, i.e., out of the synchronic beginning of planetary motion and time series.

6.5.2 *Plato's* Chōra *and Instantaneity*

I would like now to discuss the consequences of reinterpreting temporality in the *Timaeus*, by showing the relevance of instantaneity for the understanding of the *chōra*. According to Sallis, the second beginning described in the dialogue is made "precisely in order to launch another discourse, a different one capable of being extended to that which remained outside Timaeus' first discourse" (Sallis 1999, 96). It is, then, for the purpose of completeness that Timaeus speaks of fire, air, water, and earth as they were before the generation of the heavens, and he appeals to the *chōra* as having a key role in the constitution of the world. I will not discuss what the *chōra* is in detail, because this would require an entirely new chapter, but I can point out the characteristics that are compatible with the idea that the *metaxu* is playing a fundamental role in enabling a transition from the four elements to the sensible world:

> Our new starting-point in describing the universe must, however, be a fuller classification than we made before. We then distinguished two things; but now a third must be pointed out. For our earlier discourse the two were sufficient: one postulated as model, intelligible and always unchangingly real; second, a copy of this model, which becomes and is visible. A third we did not then distinguish, thinking that the two would suffice; but now, it seems, the argument compels us to attempt to bring to light and describe a form difficult and obscure. What nature must we, then, conceive it to possess and what part does it play? This, more than anything else: that it is the Receptacle—as it were, the nurse—of all Becoming.
>
> *Timaeus* 48e1–49a5

The status of the *chōra* in the *Timaeus* is ambiguous, but at the same time coherent with the notion of *metaxu*. The *chōra* is in between the model and the sensible, empirical world insofar as it is in between Being and Becoming.

This characteristic of being in motion and at rest at the same time is common to both the Receptacle and the World Soul: the *chōra* shakes itself but does not change place (*situs*). A perfect image of this is offered by ancient Greek agriculture and by the image Plato uses, the metaphor of the winnowing basket (*Timaeus* 52e6–7): the basket is shaken to separate the wheat from the chaff, thanks to the action of the wind.[24] The basket is shaken in a vertical motion, up and down, but farmers were always able to pick it up at the same point, thereby ensuring equilibrium in system and periodicity. To the *chōra* we can attribute two contrary qualities at once: being in motion and at rest. Again, the careful reader will notice that this is the language of instantaneity, at least in a Platonic sense. Furthermore, the *chōra* also contains contrary qualities that contradict each other. Indeed, it would be impossible to think of contrary qualities if not in a temporal series, but in the *chōra* they can coexist. i.e., all elements (fire, air, earth, water) embodied by their traces coexist in the *chōra* without self-destructing. Moreover, in this way the Receptacle shares its atemporal character with eternity, but it would also be out of it, partly sensible, with its oscillatory motion, and therefore able to perform a mixing just like the Demiurge: both the *chōra* and the Demiurge are in the *metaxu*, they embody a form of instantaneous agency that mixes elements and orders the world. In both cases, the result is a transition from paradigms to a geometrized and sensible world. In the case of the demiurgic agency, this is the result of a teleological agency and it is accompanied with joy. In the case of the *chōra*, it is the purely mechanical shaking that orders the elements, and it is the complex interaction of the parts that constitutes the geometry of the whole physical world. I shall investigate in another paper the further implications of my reading on the Receptacle and the demiurgic agency, but I would like to leave the reader now with a clearer sense of the relevance of Plato's multifaceted notion of atemporality and of instantaneity in particular.

24 The choice of this metaphor recalls the Eleusinian Mysteries, in which a corn grain was shown to the adepts and the ceremony was accompanied by sounds produced by bronzed plates, similar to gongs. These products were artisanal artefacts that pertained to the *mythos* of demiurges, see Blakely 2006. I think it is worth mentioning these aspects in order to grasp the symbolic import of the *chōra* and Plato's allusion to esoteric wisdom as a potentially different way of dealing with fundamental questions. Indeed, the adepts of the Great Mysteries did not actively learn the secrets of the cosmos (it was not a matter of *mathēsis*), but rather had to learn to feel, *pathein*, to use emotions that could lead them to a different type of wisdom and knowledge.

6.6 Closing Remarks

In this contribution, I emphasized how time is not fundamental but coderivative, together with the world's structure, from the combination of both the circular motion of the sphere where the fixed stars rest and the variable motion of the orthogonal plane of planetary orbits. Time, together with space, is identified as the only possible means of measuring this three-dimensional world and in its essential definition, time is something that presupposes the existence of the perfection or the paradigm that it imitates, i.e., eternity. Furthermore, I have shown how time is portrayed as something that apparently flows as a fixed unit throughout all of number series. However, as shown in sections 6.2-6.3, a clearer account of temporality emerges once we focus on its opposite, atemporality. We can certainly appreciate the fact that Plato's concept of atemporality is in turn far richer than normally expected. Indeed, eternity is atemporal, like the instant, but, just like time, it seems to have a peculiar *metron*. This is something that cannot hold for the instant. The measure of the Being and eternity is the "Now," an unbounded presentness. The "Now" is not a dimension of the physical world, because it is out of the time series, which in turn imitates eternity and has unit measures to distinguish its parts. The instant, on the contrary, cannot be divided and cannot be measured. The latter constitutes a specific form of atemporality that makes generation possible and thinkable without contradiction. If the Demiurge and the *chōra* are two fundamental pillars guaranteeing the dynamics of the constituents of the world, they also enable the transition from sempiternity to the sensible world. Albeit in different ways, they nevertheless share this very specific form of atemporality and "inhabit" the *metaxu*.

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CHAPTER 7

Is the Prime Mover a Soul?

A Critique of a Platonic Thesis in Physics *VIII*

Alberto Ross

7.1 Introduction

The aim of this chapter is to reconstruct the Aristotelian reception and critique of a thesis that can be described as Platonic. When Aristotle proves the existence of a Prime Mover in *Physics* VIII, he also explains its properties and its relationship with the physical world. He explores, for example, whether the Prime Mover has magnitude, motion or potence. However, he concludes that it is not the case, because the first principle of motion must be immaterial and absolutely immobile. This description is introduced to explain the continuity and eternity of change, so the Prime Mover must not undergo any movement at all, not even of an accidental kind (*kata symbebēkos*). This implies that the first cause of motion should be different from other kinds of principles of change, such as souls, which are immobile and immaterial movers, but which undergo accidental motion. This is the case because souls are related to bodies, which are capable of motion.

In the current chapter, I will try to prove that Aristotle's clarification of this point in *Physics* VIII could be interpreted as an answer to Plato or to a Platonic interlocutor, and as a reaction against the identification of the main cause of motion with a cosmic soul. Aristotle does not mention an interlocutor explicitly in these passages of *Physics* VIII, but I will try to show that he had in mind the position defended by Plato in *Laws* X and the *Timaeus,* according to which the cosmos is an animal composed of body and soul, and that this soul is a kind of first principle for nature and change.

The present discussion is relevant for the study of the history of Platonism and its reception, but also rests on considerations that are both intrinsic and extrinsic to *Physics* VIII. First of all, because this critique plays an important role in the argument of Aristotle's text. It is not easy to understand his position in *Physics* VIII without attending to the details of his description of the nature of the Prime Mover and the criticism referred to above. Furthermore, it is well known that, according to the traditional interpretation of *Metaphysics* XII, the Unmoved Mover moves the first heaven directly and causes movement

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eternally because it is an object of love or desire. The activity of this principle is thinking, and the movement of the first sphere is precisely the imitation of this activity.[1] However, this interpretation of Aristotelian theory has been discussed in recent years, and the debate surrounding it has given rise to a complete revision of other aspects of the theory, resulting in new and different interpretations.[2] Indeed, some of them suggest that the Prime Mover could be a kind of cosmic soul or formal cause for the first sphere. However, if the interpretation I am proposing here is correct, it would imply that the identification of the Prime Unmoved Mover with a soul is not appropriate for understanding these passages, because Aristotle himself would be trying to dismiss this possibility.

The position defended in *Physics* VIII gradually introduces the consideration of an absolutely unmoved Prime Mover. To explain this thesis, I will explore and reconstruct the Aristotelian doctrine via the following steps. First, I will present the position presumably criticized by Aristotle in *Physics* VIII, namely the non-literal interpretation of the *Timaeus* and the doctrine of *Laws* X. Second, I will reconstruct Aristotle's argument by which he claims that there cannot be an infinite series of movers and moved objects and that there must be a Prime Mover. Finally, I will present the Aristotelian arguments that the Prime Mover should be absolutely unmoved. In the first steps of the argument, Aristotle leaves open the possibility that the principle in question sets itself in motion, but he ultimately settles on postulating an absolutely unmoved principle, i.e., a Prime Mover that does not undergo any movement at all, not even of an accidental kind. I will present an explanation of how Aristotle reaches these conclusions and their implications for our discussion.

If the present interpretation of *Physics* VIII is correct, there would be at least two important differences between Plato and Aristotle. On the one hand, while there is a single cosmic soul for Plato that moves the world-animal in a circular motion, for Aristotle, this explanation would imply that many souls are required for moving the heavens.[3] On the other hand, as I will try to prove, while the Platonic cosmic soul is the first principle of motion for the heavens, according to the non-literal interpretation of *Timaeus*, this would not be the

1 See Ross 1924, cxxx; Reale 1968, 588; Elders 1972, 35–43; Menn 1992, 570–73; Natali 1997, 105–23; Boeri 1999, 71–77; Sedley 2000, 327–36; Sharples 2002, 1–40; Botter 2005, 191–95; Rashed 2011, 134–40; Gourinat 2012, 201–14; Laks 2013, 14–22; Baghdassarian 2015, 161–96; Ross 2016, 208–27.

2 See Broadie 1993, 375–411; Judson 1994, 155–71; Kosman 1994, 135–53; Berti 2000, 181–206; Bradshaw 2001, 1–22; Stevens 2011, 125–37.

3 See *DC* 285a27-31; and *Met.* 1073a14-1076a4.

case for Aristotle, who introduces a different and separate Unmoved Mover. A cosmic soul would not be a good candidate for explaining the continuity and the eternity of change, according to Aristotle.

7.2 God and the Divine in Plato

Physics VIII rejects the thesis according to which the main cause for eternal change is an Unmoved Mover with accidental motion, i.e., a soul in Aristotelian terms. However, Aristotle does not identify his opponent in this book, so it is necessary to reconstruct the position he is criticizing. I will try to clarify this target by summarizing the way in which Plato introduces the existence of a cosmic soul in the *Timaeus.* I will also present in this section an outline of the argument about the notion of god in *Laws* X. The reconstruction of both arguments is crucial for clarifying the position criticized in *Physics* VIII.

The *Timaeus* opens a discussion about the origins of the cosmos in the following terms: "Has it always existed? Was there no origin from which it came to be? Or did it come to be and take its start from some origin?" (*Timaeus* 28b6–7).[4] The Platonic cosmology is introduced as a kind of cosmogony in accordance with most of the Presocratic philosophers, and attending to a shared conception of *physis* as origins, development, and current state. In order to solve the aforementioned dilemma about the origin of the cosmos, Plato claims the following: "It has come to be. For it is both visible and tangible and it has a body—and all things of that kind are perceptible. And, as we have shown, perceptible things are grasped by opinion, which involves sense perception. As such, they are things that come to be, things that are *generated*" (*Timaeus* 28b7–c2). The structure of this first argument, presented to establish the Platonic position on this topic, is very clear and can be logically reconstructed as follows:

1. Everything that is sensible (that can be seen and touched) and has a body is a thing that has become and can be generated.
2. The cosmos is sensible and has a body.
3. Therefore, the cosmos is a thing that has become and can be generated (from 1 and 2).

This argument proceeds from a generalization about the nature of bodies and sensible things, namely that all of them are generated. Given that assumption, and since Plato identifies the cosmos as a body, he infers that the cosmos must be generated. Obviously, Plato knows that the human intellect has not had a

4 In this chapter, I quote the translation of Zeyl, with slight modifications.

complete experience of the cosmos and its history, but our personal experience is enough, according to him, to describe it as something corporeal. Once this point has been established, the second stage of the argument continues as follows: "Further, we maintain that, necessarily, that which comes to be must come to be by the agency of some cause. Now to find the maker and father of this universe is hard enough, and even if I succeeded, to declare him to everyone is impossible" (*Timaeus* 28c2–5). In this passage, Plato adds a new premise that leads to a new inference and to a new consideration about the limits of his doctrine:

4. Everything that becomes must become by the agency of some cause.
5. Therefore, the cosmos must become by the agency of some cause (from 3 and 4).

In this argument, Plato introduces the principle of causality to demonstrate the need for a universal cause of the cosmos (*i.e.* the Demiurge). If the cosmos is something generated, there should be a cause of this generation (because nothing comes from nothing). Having established this conclusion, he observes the difficulty of finding the cosmic cause and the impossibility of communicating it to all mankind. This is a very important remark when it comes to defining the epistemological limits of Platonic physics or cosmology: we can aspire only to a probable discourse about the cosmos, and we should not look for any kind of certainty.[5]

The Platonic explanation of the origin of the cosmos continues by identifying the creator's motive: "He was good, and one who is good can never become jealous of anything. And so, being free of jealousy, he wanted everything to become as much like himself as was possible" (*Timaeus* 29e1–3). According to Plato, god, who is responsible for the creation of an ordered world, desired its existence, because he has a kind of generosity that leaves no space for jealousy. So, desiring that all things should be good and perfect insofar as it is possible, this god took over all that was in discordant and disorderly motion and brought it from disorder into order, because this was better in every way.[6] The result of this action was a particular being composed of body and soul.

The god designed the cosmos, and he fashioned reason within soul and soul within body, to the end that the work he accomplished might be, by nature, as excellent and perfect as possible.[7] The dialogue establishes that this cosmos is an image of an intelligible model and that it is an animal endowed with soul and body. In fact, it is a single, visible animal.[8] On the one hand, its body

5 See *Ti.* 29d1–3.
6 See *Ti.* 30a.
7 See *Ti.* 30b.
8 See *Ti.* 30d.

is harmonically constituted by the four elements,[9] and the physical cohesion of the whole cosmos is effected by the divine Demiurge through the action of four basic elements." Furthermore, it is unique and complete,[10] free from ageing and sickness,[11] spherical so as to contain all figures,[12] without external senses,[13] self-sufficient and with circular motion,[14] and linked to the cosmic soul.[15] On the other hand, Plato points out that soul was created before the body,[16] rules over it,[17] is composed,[18] is in harmony with the body,[19] is extended by the Demiurge from the center of the body,[20] and has a double relationship, with the corporeal and with ideas.[21] This description of the universe as a living being or an animal composed of body and soul was not unfamiliar in the ancient world, but present throughout antiquity, although it contained original inputs from different proposals.

Having established this description of the cosmos, Plato points out that when the father of the universe saw his creation in motion and alive, he rejoiced and, being well pleased, took it upon himself to make it yet more like its pattern.[22] But, given that it was impossible to confer eternity in full completeness on the generated thing, the god made a moving likeness of eternity: time, an everlasting likeness that moves according to number.[23] This part of the discussion is relevant because it introduces an exegetical criterion for interpreting the dialogue. Plato argues that there were no days and nights, months, or years before heaven came into being.[24] This was so because these are parts of time, and because "was" and "shall be" are Forms of time that have come into being. It is thus a mistake to transfer them unthinkingly to the eternal being. If this is correct, the literal interpretation of the dialogue would not be the most appropriate one, and several questions arise as a result.[25] One of the most important

9 See *Ti.* 32c.
10 See *Ti.* 32c–33a.
11 See *Ti.* 33b.
12 See *Ti.* 33b.
13 See *Ti.* 33c.
14 See *Ti.* 34a.
15 See *Ti.* 34b.
16 See *Ti.* 34b–c.
17 See *Ti.* 35a.
18 See *Ti.* 35a–36d.
19 See *Ti.* 36e.
20 See *Ti.* 36e.
21 See *Ti.* 37a–c.
22 See *Ti.* 37c.
23 See *Ti.* 37d.
24 See *Ti.* 37e.
25 For a detailed discussion of this topic, see chapters 2 to 4 in this volume.

issues concerns the status of the principle of the cosmos as presented by Plato at the beginning of the *Timaeus*.[26] It can be identified with a separate intellect, regarded as a symbol of the realm of ideas, or even identified with the cosmic soul.[27] If we read the *Timaeus* literally, we find two principles of motion: the god who brings about the universe and the universe itself as a god. The creator-god, whom Plato calls the *Demiurge*, is an eternal god. He is responsible for the coming into being and the continuous existence of the universe, which is simply a never-ending god. However, it is possible to essay a non-literal interpretation of these passages, following the indications of Plato.

We must remember that in *Laws* X, Plato discusses the problem of impiety and tries to refute the position of those who reject the existence of the gods. In these passages, his strategy is to show the priority of the soul with respect to the body. Plato identifies the philosophers of nature as interlocutors because they argue that all things that have been born are products of nature, whereas other things may be products of art or chance.[28] As far as the gods are concerned, Plato maintains that philosophers of nature would define them as products of art,[29] a view that has several implications.[30] In his view, the cause of philosophical atheism is a misunderstanding of the nature of the soul, concerning in particular its nature and its priority with respect to the four elements.[31] The soul is the movement that can move itself. It is a kind of first mover that dominates the heavens and the earth. If we analyze this strategy in connection with the corollary of the *Timaeus* about time, it is reasonable to defend the claim that the first principle of nature for Plato is a kind of cosmic soul. In *Laws* X, he does not refer to the *Demiurge* to criticize atheism, but to the priority of the soul. This is of interest for our present purposes, because if this is the case, the Platonic position—namely, the description of the god in *Laws* X and the non-literal interpretation of the *Timaeus*—could be what Aristotle had in mind in the refutation he undertakes in *Physics* VIII. I describe this position as "Platonic," because Aristotle himself refers to Plato and the literal interpretation of the *Timaeus* at the beginning of *Physics* VIII.[32] In order to clarify this point, in the next section, I shall present Aristotle's criticism of the thesis according to which a soul is the first cause of eternal motion.

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26 See Carone 2005.
27 See chapter 2 in this volume.
28 See *Laws* X, 888e–889a.
29 See *Laws* X, 889e.
30 See *Laws* X, 890a.
31 See *Laws* X, 891e–892c.
32 See Arist., *Ph.* 251b10–19.

7.3 The Need for a Prime Mover in *Physics* VIII.5

Aristotle postulates an absolute Unmoved Mover in *Physics* VIII. His path to that conclusion follows several steps, the first of which is pointing out the necessity of a first principle for all change. In this context, *Physics* VII.1 and VIII.5 contain the main arguments that prove the need for a Prime Mover. Looking at the arguments set forth in both books, we find that the general argument is the same, although the justification for one of the fundamental premises seems to differ.[33] The demonstration in both passages runs as follows:[34]

1. If everything that moves is moved by something, the series of movers and things moved must be either finite or infinite.
2. Everything that moves is moved by something.
3. The series mover-things moved must be either finite or infinite (from 1 and 2).
4. The series mover-things moved cannot be infinite.
5. The series mover-things moved is finite, i. e. there must be a Prime Mover (from 3 and 4).

The structure of the argument is simple. Since everything that moves is moved by something, the question then arises as to whether that which produces the change at a given moment was itself set in motion by something else. In the case of an affirmative answer, the former question could be repeated, making it necessary to discuss whether the series of movers and things moved is finite or infinite. In both texts, the argument that aims to prove the impossibility of an infinite causal series takes the form of a *reductio ad absurdum*, although the illogical consequences obtained from each argument are different. On the one hand, Aristotle infers at VII.1 that the hypothesis of an infinite series of movers and things moved would yield as a conclusion the existence of infinite change in a finite period of time.[35] On the other hand, his argument at VIII.5 results in a state where, given an infinite number of things, none is the first.[36] In both cases, these consequences lead Aristotle to discard the possibility of an infinite causal series and to affirm the need for a Prime Mover, and he concludes that there must be some first mover that is not itself moved by anything else.[37] Even if these passages introduce the necessity of a Prime Mover, they do

33 On this discussion, see Ross 1936, 99; Wardy 1990, 89; Graham 1999, 90–91; and Ross 2007, 122-138.
34 See Arist., *Ph.* 242a49–54 and 256a14–19.
35 See *Ph.* 242b69–70.
36 See *Ph.* 256a18–19.
37 See *Ph.* 256a13–17.

not yet show the need for an absolute Unmoved Mover. The subsequent steps at *Physics* VIII.5 and 6 are introduced to clarify the nature of this principle, and to explain not only why things change but also why they do so eternally.

Once Aristotle has postulated a Prime Mover, he aims to show at *Physics* VIII.5 that (i) it is not necessary to be moved in order to cause motion and (ii) that it is impossible to move eternally and to undergo accidental motion.[38] Aristotle describes this argument as another way of arriving at the same conclusions mentioned in the previous section.[39] These remarks will be important in order to prove that being in motion is not a necessary condition for causing motion. The first argument for proving his thesis runs as follows:

> Now if the mover is *moved* not accidentally but necessarily—so that, if it were not in motion, it would not move anything—then the mover, insofar as *it is moved*, must be moved either with the same kind of motion, or with a different kind—either that which is heating, I mean, is itself becoming hot, that which is making healthy is becoming healthy, and that which is causing locomotion is in process of locomotion, or else that which is making healthy is in process of locomotion, and that which is causing locomotion is in process of increase. But it is evident that this is impossible.
>
> *Physics* 256b27–34[40]

The new argument contained in this passage can be reconstructed in the following terms:

1. If the mover is necessarily moved to cause motion, then either (i) it is moved according to the same kind of motion that it causes or (ii) it is moved according to some other kind of motion.

The conditional explores two cases. On the one hand, there is a symmetrical relationship between agent and patient, that is to say, whatever heats would have to be heated in order to heat, or whatever produces good health would have to be made healthy to cause motion. On the other hand, Aristotle initiates an asymmetrical relationship between mover and things moved, that is to say, that which makes healthy would be moved and that which produces movement would be increased in order to move. Aristotle disregards both cases to deny that the mover must necessarily be moved and that it moves by virtue of that necessity. He rejects the first option by means of the following argument:[41]

38 See Ross 2007, 138-148.
39 See *Ph.* 256b3–4.
40 In this chapter I quote the translation of Ross (1936), with slight modifications.
41 See *Ph.* 257a1–3.

2. If (i) the mover is moved according to the same kind of motion that it causes, then to teach a proposition of geometry is the same as to learn it (or one who effects the act of throwing in the same way would have to be identified with the object thrown).

Aristotle remarks that we must apply the argument to the very lowest species into which motion can be divided.[42] According to this argument, a geometry professor, who in this context functions like a mover, would in turn be moved by the same movement that he produces. That is to say, when teaching geometry, he would himself be taught on the same subject and in exactly the same way, which is absurd. The second option of the consequent is also rejected, by means of the addition of the following premises:[43]

3. If the mover is moved by another kind of motion, then what produces a displacement is increased, what makes a particular object grow is altered by some other thing, and what brings about the alteration of this other object is set in motion with a different motion.
4. If this were the case, the process must stop at some point (for the kinds of motion are finite in number).
5. If the process stops, the series of motions must be able to be repeated again and again.
6. Repeating the series again and again is the same as directly saying that what produces a displacement is displaced or that he who teaches is being taught.

The second option thus ultimately arrives at the same absurd consequence as the first. The justification of conditional (6) is, in effect, that not only is the moved set in motion by the preceding or immediate mover, but that the preceding mover is also moved, and to a greater degree, by the first among the movers.[44] Once again, it would appear that he who teaches is learning, when of necessity he who teaches has knowledge and he who learns does not. Likewise, it would seem absurd that, in effect, one who has the capacity to be altered necessarily has the capacity to be enlarged, and so on.[45]

These arguments lead to the conclusion that it is not necessary to be moved in order to move. This observation leads to the following alternative: "Consequently the first thing that is in motion will derive its motion either from something that is at rest or from itself" (*Physics* 257a26–27). Up to this point, it is clear that there must be a Prime Mover that is not moved by anything

42 See *Ph.* 256b34–257a1.
43 See *Ph.* 257a1–14.
44 See *Ph.* 257a10–12.
45 See *Ph.* 257a24–25.

else. This conclusion opens the discussion to other questions. Aristotle's characterization of the aforementioned principle is still incomplete, because he is still unable to give an explanation of the eternal nature of change in the strict sense, as we shall now see.

7.4 Is Aristotle's Prime Mover a Soul?

Once he has introduced the need for a mover that is not moved by another, Aristotle proceeds to postulate an absolutely unmoved principle, i.e., a Prime Mover that must not undergo any movement at all, not even of an accidental sort. This principle would be different from other principles of movement, e.g., souls, which are immobile and immaterial movers, but undergo accidental motion (*kata symbebēkos*).[46] At *Physics* VIII.5, we find the first indication of the Prime Mover in the following passage:

> If, then, it is an accidental attribute, it is not necessary that that which causes motion should be *moved*; and if this is so, it is clear that there may be a time when nothing that exists is in motion, since the accidental is not necessary but contingent. Now if we assume something possible, nothing impossible will follow (though something false may). But the non-existence of motion is an impossibility; for we have shown above that there must always be motion.
>
> *Physics* 256b7–9

According to these lines, if the Prime Mover experiences motion, even in an accidental way—as happens, for example, in the case of a living being's soul—it is possible that the movement is not eternal. Aristotle does not mention an interlocutor explicitly in these passages, but the point of discussion is clear. The conditional is justified by the idea that the accidental is not necessary but rather contingent—in other words, it does not have to exist. If the Prime Mover is not free of potential elements, it cannot account for the eternity of change. The souls are not bodies, but they are Forms of bodies. Actually, in this context, it is worth noting that Aristotle introduces a positive mention of Anaxagoras in *Physics* VIII, which seems to support a non-immanent reading regarding the Prime Mover. Aristotle regards Anaxagoras' manner of expression favorably, according to which the Intellect is what produces movement,

46 See Boeri 2003 and Ross 2010.

being itself impassive and unmixed, which permits it to move and to govern.[47] This makes it much more reasonable to suppose that we are dealing with a transcendent principle and not with a soul in the strict sense.[48]

Along similar lines, *Physics* VIII.6 sets out to prove that the Prime Mover must be absolutely immobile. Aristotle seeks to rule out the possibility that the Prime Mover undergoes movement even in an accidental sense.[49] In his commentary on these lines, Simplicius points out that the addition of "unmoved" is not a repetition with respect to VIII.5 but means "in fact entirely unmoved" (*teleos akineton*), such that it participates neither in the change involved in generation and perishing nor in that which is involved in accidental motion.[50] Evidently this claim is made for the purpose of explaining the eternity of change. Aristotle analyzes two possible candidates to account for the eternal nature of change: first, the totality of souls as immobile principles, and second, an Unmoved Mover capable of experiencing accidental motion, i. e., a soul. In the end, he rejects both options.

The argument with which Aristotle rejects the possibility that a set of souls could account for the eternity of change starts in the following passage:

> Let us suppose, if you will, that in the case of certain things it is possible for them at different times to be and not to be, without any process of becoming and perishing (in fact it would seem to be necessary, if a thing that has not parts at one time is and at another time is not, that any such thing should without undergoing any change at one time be and at another time not be). And let us further suppose it possible that some principles that are unmoved but capable of imparting motion at one time are and at another time are not.
>
> *Physics* 258b16–22

In this text, Aristotle had in mind a set of souls with the following characteristics: (i) they can exist at one moment and not exist at another moment, without generation or corruption; (ii) they lack parts; and (iii) they produce motion.[51] Now, it appears that entities with these characteristics are incapable of accounting for the eternal and continual process of generation and corruption, because there must be something that causes things that move themselves

47 See *Ph.* 256b20–27.
48 See Boeri 2003, 218.
49 See *Ph.* 258b10–11.
50 See Simplicius, *In Phys.* 1251,4–6.
51 See Simplicius, *In Phys.* 1251, 26ff.

to be at one time and not to be at another.[52] Every soul in particular explains why the associated living individual moves, but this does not explain eternal succession. Souls do not exist forever, and thus, they cannot be the cause of the generation of certain things and not others, nor can they be causes of the fact that this process takes place without interruption.[53] If the process of being and not being is continuous, its cause must also be so, since there must be an affinity between the cause and the thing caused.

These immobile movers cannot be the cause of the eternal and the continuous, whether taken individually or in a successive series. Souls taken as a whole do not exist simultaneously but rather only in succession, and thus the continuity of the process cannot be explained on that basis.[54] The conclusion, deduced from the initial supposition, is that there has to be something that comprehends them all (the unmoved movers that perish), and that this causes the motion of the movers, while they are the causes of the motion of other things.[55] Then, given that motion is eternal, the argument concludes as follows: "the first mover will be eternal also (*if there is just one*); if there are more than one, there will be a plurality of such eternal movers" (*Physics* 259a6–8). In support of the existence of one sole mover, Aristotle gives at least two arguments. One of them appeals to a kind of principle of explanatory economy to establish that conclusion.[56] He points out that we ought to suppose that there is one rather than many, and a finite rather than an infinite number.[57] If the consequences of either assumption are the same, we should always assume that things are finite rather than infinite in number. Regarding this conclusion, Graham points out that for Aristotle, following Plato, the world is organized for the best, although the cause of that is different in every case.[58]

Having stated that the principle of motion is one mover, Aristotle then offers other ways to justify the postulation of an absolute Unmoved Mover.[59] A new argument appears in the following passage:

> So the necessity that there should be motion continuously requires that there should be a first mover that is unmoved even accidentally, if, as we

52 See *Ph.* 258b23–24.
53 See *Ph.* 258b26–29.
54 See *Ph.* 258b29–32.
55 See *Ph.* 258b32–259a6.
56 See Graham 1999, 108.
57 See *Ph.* 259a8–13.
58 See Graham 1999, 108.
59 See *Ph.* 259a20–22.

> have said, there is to be in the world of things an unceasing and undying motion, and the world is to remain self-contained and within the same limits; for if the principle is permanent, the universe must also be permanent, since it is continuous with the principle.
>
> *Physics* 259b20–28

The argument presented in this passage could be formulated as follows:

1. The Prime Mover is (a) immobile but undergoes accidental motion or is (b) absolutely immobile.
2. If the Prime Mover is immobile but undergoes accidental motion, it cannot produce an eternal movement (continuous, incessant, and immortal).
3. Movement is eternal (according to *Physics* VIII.1 and VIII.2).
4. Therefore, the Prime Mover cannot be immobile and undergo accidental motion (from 2 and 3).
5. Hence, the Prime Mover is absolutely immobile (from 1 and 4).

The central part of this argument is implication (2). Why, if the Prime Mover were immobile but experienced accidental motion, could it not produce a continuous motion? Aristotle justifies his position by examining the movement of animals, which are self-moving beings whose movement is produced by an immobile Prime Mover, namely the soul. These beings, Aristotle argues, move themselves in terms of locomotion, but they also experience other natural movements that they do not effect by themselves, such as growth, shrinking, and respiration, even when in repose.[60] The cause of these kinds of movement is, according to Aristotle, the environment and many things that enter into the animal. In some cases, the cause is nourishment: when it is being digested, animals sleep, and when it is being distributed, they awake and move themselves, the first principle of this motion being thus originally derived from outside.[61] From this conclusion, he infers the following:

> Therefore animals are not always in continuous motion by their own agency; it is something else that moves them, itself being in motion and changing as it comes into relation with each several thing that moves itself. (Moreover, in all these things the first mover and cause of their self-motion is itself moved by itself, though in an accidental sense; that is to

60 See *Ph*. 259b6–11.
61 See *Ph*. 259b 12–14.

> say, the body changes its place, so that that which is in the body changes its place also and moves itself by leverage).
>
> *Physics* 259b14–20

This argument is interesting in that it is presented as a case in which the causal power of the soul, as Prime Mover, is affected and therefore cannot cause continuous movement, thus showing that a soul cannot be the ultimate explanation for the eternity of change.[62] The Prime Mover in the case of animals is the soul, and the body would be a kind of tool for the agency of the soul.[63] Here, Aristotle does not mention an opponent, but we have seen that such a position is defended by Plato, at least according to the non-literal interpretation mentioned above.[64] A cosmic soul cannot be the cause of the eternity of change because if a principle of motion belongs to the class of unmoved things that move themselves accidentally, it cannot cause continuous motion.[65] As Simplicius remarks in his commentary on this passage, Aristotle does not believe that being moved accidentally is one thing when applied to mortal animals and quite another thing when it is caused by something else.[66] In this case, the study of terrestrial animals and how their souls move their bodies helps us to grasp the mode of self-movement of the heavenly bodies, by analogy and extension.

7.5 Final Remarks: The Absolute Immobility of the Prime Mover

The possibility of identifying the Prime Mover with a soul would be a more economical theory than that which follows from the present interpretation of *Physics* VIII. However, Aristotle explicitly argues, as we have seen, that the Prime Mover cannot undergo accidental movement—contrary to the case of souls in the context of Aristotelian philosophy. Obviously, the defenders of the thesis according to which the Prime Mover is a kind of cosmic soul or formal cause could emphasize some aspects of the Platonic position in order to achieve their purpose.[67] For example, it can be argued that the cosmic soul is

62 See Ross 1936, 702–8; Boeri 2003, 232–36.

63 See Graham 1999, 111.

64 On the different kinds of possible opponents for Aristotle in these passages, see Graham 1999, 115–18.

65 See *Ph*. 259b20–22.

66 See Simplicius, *In Phys*. 1262, 5–7.

67 I discuss this objection in Ross 2007, 211-213; and 2010, 222-224.

a peculiar case of formal cause that lacks, properly speaking, a surrounding medium toward which it could move or that could affect it.[68] The body in which it finds itself cannot transport itself to another place. Hence, it could neither undergo movement accidentally nor find itself affected by the influence of the medium surrounding it. However, Aristotle clearly says that the Prime Mover is separate and unmixed. If we attend to the definition at *De anima* II.1, a soul must enter into a composition with a body as the first act of a body.[69] Thus, the Prime Mover cannot be a soul. Furthermore, the identification of the Prime Mover with a cosmic soul is also problematic because, according to *Physics* VIII, animals move only with a particular kind of motion (locomotion), but there are other kinds that take place within the animal. These motions prevent a continuous locomotion.[70] Thus, according to Aristotle's argument in *Physics* VIII, even the case of a heaven with no surrounding medium would not be sufficient to justify the conclusion that the soul is the ultimate explanation of the motion.

In summary, if the present interpretation of *Physics* VIII is correct, we might read the arguments of Aristotle as a reaction against Plato or against the arguments of the *Timaeus* and *Laws* X. There would be good reasons for declining to identify the Prime Mover with a soul and thereby rejecting the interpretation of Aristotelian theology that refers back to a kind of cosmic soul as the first principle of change. While the Platonic cosmic soul would be the first principle of motion for heavens in Aristotelian terms, this would not be the case in *Physics* VIII, where Aristotle introduces a different and separate Unmoved Mover. In fact, as I have tried to prove, Aristotle thinks that a cosmic soul as a first cause cannot cause and explain the continuity and eternity of change. The need for a Prime, Unmoved Mover in *Physics* VIII does not hinge upon the simple existence of motion, but rather on its continuous and eternal nature. Aristotle's argumentation points toward a principle of nature such that the possibility of its ceasing to move would be inadmissible. The Prime Mover should be absolutely unmoved.

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68 See *DC* 279a24, 278b23 y 284a7 and *Ph.* 258b13–16, 259b7–37.
69 See *DA* 412a27–28.
70 See *Ph.* 259b6–20.

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CHAPTER 8

Stoic Cosmic Intelligence and Its Platonic Background

Ricardo Salles

In what follows, I offer a tentative classification, divided into three distinct families, of the proofs that the Stoics designed to show that the cosmos—the geocentric system composed by earth, sun, moon, planets and fixed stars, and the laws that govern their motion—is rational (*logikon*) or intelligent (*noeron*). All three agree that the cosmos is intelligent in the strong sense that it has the capacity for thinking. There is also a *fourth* family that I shall not discuss in this chapter and that I must set aside at the outset. It concurs with the other three in the conclusion that the cosmos is intelligent, but, in contrast with them, its main recourse is to the identity between god and cosmos. Actually, in Stoicism there are three senses of the term "cosmos" (*kosmos*): (i) the geocentric system above mentioned, (ii) the ungenerated and indestructible cause of this order and its periodical destruction, namely, god, and (iii) the conjunction of (ii) and (iii). It would follow from (ii)—the identity between god and cosmos—that the cosmos is intelligent because god itself is intelligent. The thesis that the cosmos is intelligent, given this identity, rests ultimately on the Stoic proofs for the existence of god itself as an intelligent being.[1]

The three families of "non-identity" proofs, which are the focus of the present chapter, are the following. The first one—F_1—goes back to the *Timaeus* and rests on a teleological conception of human intelligence, which exists for the contemplation of the cosmos: it is teleological in the specific sense that its purpose in the cosmos is to carry out this particular function. This family differs from the others—F_2 and F_3—because these argue for the intelligence of the cosmos from an account of the origin of human intelligence, i.e., of how human intelligence came into being at the zoogony, when humankind was created. F_2 and F_3 are both related to a Platonic proof for the intelligence of the cosmos in the *Philebus* and a similar proof in Xenophon. But F_2 and F_3 also differ sharply from one another on the question of exactly how human intelligence is transmitted to us from its origin. The three families pose exegetical

1 These proofs are studied in Dragona-Monachou 1976, Sedley 2005, and Meijer 2007.

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and philosophical difficulties that they leave unresolved. I shall offer some examples as we proceed. However, my ultimate purpose here is not to clear up these difficulties, a task that I have tried to achieve in a series of recent articles,[2] but to supply an overall view of the three families and their Platonic background, which has not yet been provided in recent Stoic scholarship.[3]

In section 8.1, I deal with F_1 and F_2, and establish that they do differ from one another according to the contrast I mentioned above: between holding that the cosmos is intelligent because we exist for the sake of its contemplation, and holding that it is intelligent because it is the origin of our intelligence. In section 8.2, I bring forth the Platonic antecedents of these two families, and in section 8.3 I present the difference between F_2 and F_3. Although both F_2 and F_3 argue that the cosmos is intelligent because it is the origin of our intelligence, the account they give of how our intelligence proceeds from its origin is quite different.

8.1 The Teleological Basis of F1 and the Biological Basis of F2

The basic-argument structure of F_1 is the following: given that (a_1) the intelligent is superior to (*kreitton*) the non-intelligent, and (b_1) nothing is superior to the cosmos, it follows that (c_1) the cosmos is intelligent. The two premises of the basic-argument structure of F_1 are deeply grounded in Stoic teleology. This is not the place to undertake a detailed analysis of this theory and, although there are numerous sources that report it, I shall focus only on two of them.[4] The first one is Cicero, in a passage from the *De natura deorum*.

> **T1.** Cicero, *De natura deorum* 2.37–38 (> SVF 2.1153, < LS 54H, BS 12.14)
>
> Neque enim est quicquam aliud praeter mundum quoi nihil absit quodque undique aptum atque perfectum expletumque sit omnibus suis numeris et partibus. Scite enim Chrysippus, ut clipei causa involucrum vaginam autem gladii, sic praeter mundum cetera omnia aliorum causa esse generata, ut eas fruges atque fructus, quos terra gignit, animantium

2 See Salles 2018, 2021a; 2021b. For F_1 see Sedley 2007, 225–30 and for F_2 Sedley 2007, 210–25; Sedley 2012, 397–98. For F_2 see more recently Ademollo 2020. See also Powers 2012.

3 The present chapter supersedes Salles 2013, where I also offer this type of panoramic account. See also the insightful presentation in Sedley (2007, 210–30) where the difference between F_2 and F_3 that I present here is not, however, regarded as fundamental.

4 Most of these sources are collected by von Arnim under SVF 2.1127–1167.

causa, animantes autem hominum, ut ecum vehendi causa, arandi bovem, venandi et custodiendi canem; ipse autem homo ortus est ad mundum contemplandum et imitandum — nullo modo perfectus, sed est quaedam particula perfecti. sed mundus quoniam omnia conplexus est neque est quicquam, quod non insit in eo, perfectus undique est; qui igitur potest ei deesse id, quod est optimum? nihil autem est mente et ratione melius; ergo haec mundo deesse non possunt.

For nor is there anything other than the cosmos which has not something missing, and which is totally fitted, perfect and complete in all its elements and parts. For Chrysippus skilfully says that just as the shield-cover exists for the sake of the shield and the sheath for the sake of the sword, so too with the exception of the cosmos all else is generated for the sake of other things. For instance, the crops and fruits which the earth produces [are generated] for the sake of animate beings, and the animate beings for the sake of human beings (the horse for transport, the ox for ploughing, the dog for hunting and guarding). Humankind itself—being in no way perfect, but a particle of what is perfect—has arisen in order to contemplate and imitate the cosmos. But the cosmos, since it embraces everything and there is not anything that does not exist in it, is totally perfect. How then could it lack what is optimal? But nothing is better than intelligence and reason. Therefore, the cosmos cannot lack this.

The text indicates why certain beings within the cosmos are superior to others and why none of them is superior to the cosmos itself. What is it that explains this superiority? The general principle may be stated as follows. A is superior to B if B exists for the sake of A but not vice versa, and this is so if and only if three conditions are met: (i) the existence of B is necessary in order for A to perform the function that is specific to A, (ii) the *primary function* of *B* is to assist A in performing its specific function, and (iii) the existence of B is due to the fact that B performs this function. For instance, the saw exists for the sake of the carpenter (who is therefore superior to the saw) insofar as the carpenter, in order to perform his proper function, namely, the construction of wooden structures, needs the saw (first condition), the primary function of the saw is to help the carpenter to construct wooden structures (second condition), and if no one constructed these structures, there would be no saws (third condition). The combination of these three conditions gives rise to an extremely complex natural teleology. For example, someone who opposes this teleology could concede (i) but deny (ii) on the grounds that the former

does not necessarily imply the latter. The existence of A could be necessary for the existence of B, even when the *primary function* of A is not to help B to perform its own specific function. Likewise, this opponent could concede (i) and (ii), but deny (iii) on the grounds that, even if the primary function of A is to serve the primary function of B, this does not necessarily imply that A would not exist without performing its function. For the Stoics, however, all natural beings in the cosmos are either superior or inferior to some other being according to these three conditions: it is necessary that, for any natural being X, there exists a natural being Y such that Y is either superior or inferior to X according to these three conditions. And the cosmos as a whole is the only natural being for which there is no other natural being *superior* to it according to these conditions. In particular, human beings are superior to any lower natural species, but the cosmos is superior to them, for according to **T1** they exist for the sake of the cosmos even though the text does not spell out exactly what the proper function of the cosmos is and how human beings serve this function. This teleological superiority is also referred to by Epictetus in a key teleological text.

T2. Epictetus, *Dissertationes ab Arriano digestae* 1.6.18–22 (< *LS* 63E, *BS* 29.7)

τί οὖν; ἐκείνων ἕκαστον κατασκευάζει τὸ μὲν ὥστ' ἐσθίεσθαι, τὸ δ' ὥστε ὑπηρετεῖν εἰς γεωργίαν, τὸ δ' ὥστε τυρὸν φέρειν, τὸ δ' ἄλλο ἐπ' ἄλλῃ χρείᾳ παραπλησίῳ, πρὸς ἃ τίς χρεία τοῦ παρακολουθεῖν ταῖς φαντασίαις καὶ ταύτας διακρίνειν δύνασθαι; τὸν δ' ἄνθρωπον θεατὴν εἰσήγαγεν αὐτοῦ τε καὶ τῶν ἔργων τῶν αὐτοῦ, καὶ οὐ μόνον θεατήν, ἀλλὰ καὶ ἐξηγητὴν αὐτῶν. διὰ τοῦτο αἰσχρόν ἐστι τῷ ἀνθρώπῳ ἄρχεσθαι καὶ καταλήγειν ὅπου καὶ τὰ ἄλογα, ἀλλὰ μᾶλλον ἔνθεν μὲν ἄρχεσθαι, καταλήγειν δὲ ἐφ' ὃ κατέληξεν ἐφ' ἡμῶν καὶ ἡ φύσις. κατέληξεν δ' ἐπὶ θεωρίαν καὶ παρακολούθησιν καὶ σύμφωνον διεξαγωγὴν τῇ φύσει.

So then [god] constitutes each of the animals [in a certain way:] one in such a way as to be eaten, another in such a way as to serve in agriculture, another in such a way as to produce cheese and the other for another similar use. But for such activities what is the use of being capable of understanding, and distinguishing between, impressions? But god introduced the human being as a contemplator of himself and of his works; and not only as a contemplator, but as an expounder of them. For this reason, it is shameful for the human being to begin and to stop where irrational animals do, and he should rather begin there, but stop where

> nature stopped relative to us, and she did so in contemplation and understanding and a way of life in harmony with nature.

This passage rules out that the cosmos as a whole exists for the sake of humankind. In fact, it suggests the opposite: human beings exist for the sake of the cosmos, namely, for its contemplation. For this reason, in Epictetus, as in F_1, teleology is not anthropocentric like other prominent ancient teleologies, but "cosmocentric."[5] The two passages, however, leave us in the dark as to why the intelligent could not exist for the sake of something non-intelligent and, in particular, why the fact that humans exist for the contemplation of the cosmos implies that the cosmos is itself intelligent, as much as they leave us in the dark, as I noted above, regarding what the function of the cosmos as a whole could be and why human intelligence serves this function. As will be seen in section 8.2 below, this explanation is also omitted in the Timaean antecedent of F_1.

In contrast with F_1, F_2 is based on Stoic biology and the assumption that the cosmos as a whole is internally organized as a biological entity. The basic-argument structure of this new family is the following: (a_2) in the zoogony, human beings develop from a seed; (b_2) human beings are intelligent, and if so, their seed too is intelligent; (c_2) the seed of human beings is produced by the cosmos; therefore, (d_2) the cosmos must be intelligent too. The main source for F_2 is a passage from Sextus Empiricus that I cite and discuss in some detail in section 8.3 below (**T9**). In what follows, I concentrate upon (c_2) and the more general idea, entailed by the conjunction of (b_2) and (c_2), that human beings are ultimately produced by the cosmos. In this vein, I discuss some elements of ontogenesis in Stoic embryology and of phylogenesis in Stoic zoogony.

The thesis that the cosmos produces human beings refers to zoogonic phylogenesis. As a matter of fact, the Stoics maintained that natural species began to exist at a certain point in time, when the conflagration of the previous cosmos was over, and a new cosmogony began. What exactly is the process through which animal species, and humankind in particular, were created, according to the Stoics? Very little is known about this issue and in the remainder of this section I present some of the information we do have.

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5 I discuss this issue in some detail in Salles 2021a. One *cosmocentric* teleology that could constitute an antecedent of F_1 is the teleology put forward in Plato, *Laws* X 903b4–c5. This cosmocentric teleology, however, differs from the cosmocentricism of F_1. In F_1 the claim that the cosmos is intelligent is inferred from the claim that everything exists for its sake, whereas in *Laws* X the order is reversed: the claim that everything exists for the sake of the cosmos is inferred from the claim that it is intelligent. For discussion see Salles 2021a.

According to one source, in the Stoic zoogony plants and animals, which are heterogeneous, composite substances (i.e., composite substances with differentiated organic parts, e.g., plants and animals), were generated by the assemblage of homogenous, composite substances (i.e., composite substances that do not have organic parts, e.g., gold, wood, or flesh). This source is Galen, in a passage preserved in Arabic, edited by Lyons in 1969, and in a Renaissance Latin translation edited by Kollesch, Nickel, and Strohmaier in 1969 (previously edited by Kalbfleisch in 1904).

T3. Galen, *De causis contentiuis* 1.1–5 (< *LS* 55F, < *BS* 12.17)

> They [the Stoics] establish that, from the four elements, the bodies that Aristotle calls 'of equal parts' and Plato 'first born' are produced, and that the other bodies are composed of these. Of the elements, some they call 'material' and some 'active' and 'efficient,' and they say that the former are held together by the latter, and that fire and air are active and, in fact, that water and earth are passive. They also say that, in composite bodies, the efficient elements totally pervade the material ones, i. e. air and fire [totally pervade] water and earth, and that air is cold and fire is hot. By the natural means of air, a substance is collected and thickened; by means of fire, it expands, slackening and broadening. The active elements have fine parts but the others thick ones. They call 'breath' all substance with fine parts and they say that its function is to hold together natural and animal bodies. By 'natural bodies' I mean those whose generation does not occur by the agency of human beings, but by nature, such as copper, stones, gold, wood and those parts of animals that are called 'primary' and 'of equal parts,' namely, nerves, veins, arteries, cartilage, bones, and anything else of this kind. Just as human beings unite bits of wood to one another with the help of glue, nails, pegs, clay, gypsum, and lime, so too we notice that nature unites all parts of animals by means of ligaments, cartilage, and flesh in order to form an entity that has unity. […] However, it is not these things, but the substance with fine parts that the Stoics call the cohesive cause of beings.[6]

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6 This is my translation of the Latin text printed in Long and Sedley (1987, 2: 334–35) (Long and Sedley's own translation in 1.334–335 being "an adaptation of that from the Arabic by M. C. Lyons"). The passage is reminiscent of *Timaeus* 42e-43a where the creation of the human body is also carried out by the assemblage of portions of homogenous substances, especially, the four elements.

Galen, however, does not say how the *soul* of animals in general, and the intelligent soul of human beings in particular, are generated. The Stoic theory is intended to explain primarily how the *bodies* of animals are created. Their bodies come into being through the assemblage of cartilage, tendons, and bones. These do not blend with one another: they are rather juxtaposed and glued together. Note that in the passage the "parts of animals" put together by tendons, cartilage, and flesh are heterogeneous bodies. But the text is ambiguous as to whether, in the case of animals, these parts are the *result* of homogenous substances united by tendons, cartilage, and flesh (for example, hands are the result of cartilage and tendons uniting bones), or whether they are the substances that are *united* to other substances by tendons, cartilage, and flesh (for example, hands are united to other heterogeneous bodies, e.g., arms, to form a human being). Perhaps the theory means that in many cases they are both. In any case, the generation of the bodies of animals (and probably their heterogeneous parts as well) occurs not by the mixture of homogeneous substances, but by their assemblage.

What about the soul? Is it a new entity that emerges once the assemblage of the body has been completed? Or is it like cartilage, tendons, and bones: a homogenous body generated from the blending of the four elements that serves as a basic ingredient in the assemblage of the animal as a whole? The information supplied in **T3** is insufficient to answer these questions. In the former case, however, the generation of soul would be a mystery since it is difficult to work out how the mere assemblage of cartilage, tendons, and bones could give rise to a new substance, and it is more difficult still to understand how such a substance could have the powers that inhere in animal souls, including intelligence, in the case of the human soul. There is no question that, for the Stoics, the soul is a corporeal substance, a portion of breath (*pneuma*) endowed with a certain amount of tension. But it is unclear how a substance with such characteristics—or even any new substance at all—could emerge from the mere assemblage of more basic substances. In the latter case (where the soul is a homogenous body generated from the blending of the four elements) we also face some difficulties. Assuming that souls are indeed generated by the blending of the four elements, nothing is said, either in **T3** or in any other source, about the generation of the Stoic soul or how the blending of four elements can generate something as complex as a soul.

In other sources, however, distinct from **T3**, we do find a third possibility. The souls of individual animal species began to exist in the zoogony through a process that is neither an assemblage of more basic substances nor a blending of the four elements, but a material change of homogenous substances

by compression, i.e., a change of density and volume. This third process is described by Plutarch.

> **T4.** Plutarch, *De Stoicorum Repugnantiis* 1052F–1053A (< *SVF* 2.806, < *BS* 15.8)
>
> Τὸ βρέφος ἐν τῇ γαστρὶ φύσει τρέφεσθαι νομίζει καθάπερ φυτόν· ὅταν δὲ τεχθῇ, ψυχόμενον ὑπὸ τοῦ ἀέρος καὶ στομούμενον τὸ πνεῦμα μεταβάλλειν καὶ γίνεσθαι
>
> ζῷον· ὅθεν οὐκ ἀπὸ τρόπου τὴν ψυχὴν ὠνομάσθαι παρὰ τὴν ψῦξιν.
>
> He [sc. Chrysippus] thinks that the embryo in the womb is fed as a plant and that as soon as it is born, being cooled and hardened by the air, the breath changes and the animal is generated, from which it is not absurd to conclude that soul be named after cooling.

The Chrysippean theory presented here was later defended and developed by other Stoics, e.g., Hierocles in *Elementa Moralia* 1, 15–27.[7] The theory identifies the soul (and by implication intelligence) with a corporeal substance that comes into existence when the embryo encounters a change of temperature. Against this claim, Plutarch objects that the soul cannot be generated in this way if, as Chrysippus also maintains, the soul is a substance whose material composition is thinner than that of the embryo, which necessarily implies that the contraction of the embryo could only give rise to a *thicker* substance, not a thinner one, as Chrysippus alleges. This is a powerful objection, and it is not immediately evident how Chrysippus can avoid it.

Furthermore, one important aspect of the theory reported in **T4** is its focus on animal *ontogenesis*, i.e., the generation of an individual from another individual of the same animal species. But the thesis we are more interested in—that the *cosmos* gives rise to human beings—belongs to phylogenesis, the generation of the different animal species. So even if an adequate explanation of the generation of soul can be extracted from **T4**, it is still debatable as to how this theory applies to animal phylogenesis. One especially important issue in

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7 Plutarch returns to this doctrine and its criticism in *De primo frigido* 946B–C (*SVF* 2.407). For discussion of Hierocles' Chrysippean embryology, see Bastianini and Long 1992, 369–70; Colvin 2005, 267–68; Ramelli and Konstan 2009, 37–38; Boeri and Salles 2014, 307–38, 320; Gourinat 2016. For the attribution of this theory to Chrysippus, its impact on Diogenes of Babylon, and its origin in Cleanthes, see Tieleman 1991.

this discussion is the role given to "seminal principles" (*spermatikoi logoi*) in this process. In Stoic biology, seminal principles are involved in the generation of any natural being that originates in, and evolves from, a seed (*sperma*), which includes the cosmos as a whole. They are precisely the principles that guide the development of that being from its seed. For example, in ordinary ontogenesis the seminal principles of a human being, Jane, are the principles that guide the development of the seed of Jane into Jane: they determine, for instance, the transformation of Jane's *seed* (in modern biology, the individual spermatozoon-ovum from which she issues) into a specific *embryo* in her mother's womb, which gives rise to a particular *infant* and ultimately to *Jane herself*. In this vein, some scholars have compared Stoic seminal principles to DNA insofar as they both predetermine how a particular being evolves from its seed to maturity and death.[8] By analogy, the seminal principles that guide the generation of humankind would determine its generation, evolution, and destruction in the history of the cosmos. There are, however, very few sources that deal with this part of Stoic zoogony and full analysis of the evidence is yet to be accomplished. One particular philosophical problem is why the phylogenetic processes by which a living species is created is comparable in any way to the ontogenetic process by which an *individual* living being is created. Until we have a satisfactory answer to this question, it is extremely difficult to fathom how, assuming that humankind is indeed generated by the cosmos, the cosmos itself would be intelligent.[9]

8.2 The Platonic Roots of F1 and F2

The thesis that the cosmos as a whole is intelligent, in the sense that it is capable of thinking, is already present in Plato. In this section, I point out some specific Platonic antecedents of F_1 and F_2. I bypass the interesting but complex issue of exactly how the Platonic ideas present in these families were transmitted to the Stoics. My interest here is simply in locating the Platonic passages in which these ideas arise.

8 See Long (2010, 49), "In a quite literal sense, this divinity, to whom the Stoics gave the exalted name Zeus, fathers the world by endowing matter (allegorically construed as the female goddess Hera) with a kind of cosmic DNA or genetic program [...] Having seeded the world, as it were, the Stoic divinity causes the world to evolve according to his predetermined formulae (*spermatikoi logoi*)." See also Hunt 1976, 37–38; Hahm 1977, 75–76; Furley 1999, 436–37; Cooper 2009, 101 n. 19; Hensley 2019, 15–19; and Salles 2021b.

9 Some possibilities are explored in Salles 2021b.

Beginning with F_1, the Platonic antecedent of this family is *Timaeus* 30a2–c1. Here, Timaeus develops an argument whose conclusion is that the cosmos is ensouled (*empsychon*) and intelligent (*noeron*). According to Timaeus, the Demiurge gave the cosmos these properties in order for the cosmos to be as beautiful and good as possible, for being ensouled is better than lacking soul and being intelligent is better than being unintelligent.[10] The Timaean passage is as follows.

T5. Plato, *Timaeus* 30a2–c1

βουληθεὶς γὰρ ὁ θεὸς ἀγαθὰ μὲν πάντα, φλαῦρον δὲ μηδὲν εἶναι κατὰ δύναμιν, οὕτω δὴ πᾶν ὅσον ἦν ὁρατὸν παραλαβὼν οὐχ ἡσυχίαν ἄγον ἀλλὰ κινούμενον πλημμελῶς καὶ ἀτάκτως, εἰς τάξιν αὐτὸ ἤγαγεν ἐκ τῆς ἀταξίας, ἡγησάμενος ἐκεῖνο τούτου πάντως ἄμεινον. θέμις δ᾽ οὔτ᾽ ἦν οὔτ᾽ ἔστιν τῷ ἀρίστῳ δρᾶν ἄλλο πλὴν τὸ κάλλιστον· λογισάμενος οὖν ηὕρισκεν ἐκ τῶν κατὰ φύσιν ὁρατῶν οὐδὲν ἀνόητον τοῦ νοῦν ἔχοντος ὅλον ὅλου κάλλιον ἔσεσθαί ποτε ἔργον, νοῦν δ᾽ αὖ χωρὶς ψυχῆς ἀδύνατον παραγενέσθαι τῳ. διὰ δὴ τὸν λογισμὸν τόνδε νοῦν μὲν ἐν ψυχῇ, ψυχὴν δ᾽ ἐν σώματι συνιστὰς τὸ πᾶν συνετεκταίνετο, ὅπως ὅτι κάλλιστον εἴη κατὰ φύσιν ἄριστόν τε ἔργον ἀπειργασμένος. οὕτως οὖν δὴ κατὰ λόγον τὸν εἰκότα δεῖ λέγειν τόνδε τὸν κόσμον ζῷον ἔμψυχον ἔννουν τε τῇ ἀληθείᾳ διὰ τὴν τοῦ θεοῦ γενέσθαι πρόνοιαν.

Wanting everything to be good and nothing to be bad as far as possible, and so gaining control of all that was visible, though not at rest but in motion wrongly, and disorderly, god brought it from a state of disorder to one of order, believing that order was absolutely better than disorder. However, it is laid down that it was, and that it is, impossible for the best to do anything but the most beautiful. In consequence, he found out by reasoning that, among the things that are naturally

10 This strong parallel has been noted since antiquity. Sextus Empiricus in *Math.* 9.107 refers to this Timaean passage as connected to F_1 (reported, slightly earlier, in *Math.* 9.101–104 = **T9** below). The Timaean passage is cited by Sextus with some important omissions unrelated to the issues discussed in F_1. Another important antecedent of F_1 is *Laws* X 903b4–c5 where we find the notions, later used in F_1, that all things in the cosmos exists for the benefit of the cosmos in the sense that their purpose is to secure its endurance, and that the cosmos is intelligent. As I argue in Salles 2021a, however, the inferential connection between the claim that everything exists for the sake of the cosmos and the claim that the cosmos is intelligent is different in the *Laws* and in F_1. In F_1 the latter claim is inferred from the former, but in the *Laws* the order is reversed: the claim that everything exists for the sake of the cosmos is inferred from the claim that it is intelligent.

> visible, nothing unintelligent will ever be as a whole a better work than that which has intelligence, but in addition that intelligence is incapable of accruing to something without a soul. By means of this reasoning he built the whole, putting intelligence in soul and soul in body in order for the finest and the best naturally possible work to have been completed. Therefore, in line with our likely account, this is how it must be said that this cosmos was generated as a truly ensouled, intelligent animal by god's providence.

There is no question that F_1 has much in common with this Platonic proof. As in F_1, the "cosmos," whose intelligence is proved by Timaeus, is surely the system composed of the earth, sun, moon, planets and fixed stars, and the laws that govern their motion. In fact, there are detailed references to each of these components at *Timaeus* 38b5–40d5, and in general terms the whole of the *Timaeus* is a lengthy account of how each of the components of the cosmos, in this sense of "cosmos," exists for a purpose. Furthermore, the two premises of Stoic proof—(a_1) the intelligent is superior to (*kreitton*) the non-intelligent, and (b_1) nothing is superior to the cosmos—are paralleled in the Timaean proof through the claims that the cosmos is the "best" (*to kalliston*) and that the intelligent is "better as a whole" (*holon holou kallion*) than the unintelligent. The same applies to the conclusion that the cosmos is an "animal, ensouled and intelligent" (*zōon empsychon ennoun*), which is practically the same as the conclusion in F_1 except for the use in **T5** of the term ennoun instead of *noeron* for "intelligent" (ζῷον ὁ κόσμος καὶ λογικὸν καὶ ἔμψυχον καὶ νοερὸν in the Stoic version). Thus, the basic-argument structure of the Timaean proof is apparently the same as that of F_1. There are several differences that evince that the Stoics went well beyond Plato in key respects.[11] But the evident closeness between the two proofs could hardly be fortuitous. On the contrary, it strongly suggests that Zeno knew the Timaean proof well, and that he intentionally imitated its language and its structure.

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11 One difference resides in the use of the adjective "as a whole" (*holon holou*) to qualify how the intelligent is better than the unintelligent, a qualification that we do not encounter in the Zenonian proof, for which see Sedley 2007, 230. Another difference is that the Timaean proof, unlike the Zenonian one, restricts the scope of the thesis that nothing unintelligent is better than something intelligent to the realm of "naturally visible things." For this see Sextus Empiricus, *Math.* 9.109–110 and Cicero, *Nat. D.* 3.23, discussed in Schofield (1983, 34–35, 37–38), Sedley (2007, 211, 219, 229–30), and Meijer (2007, 129–32). I discuss these two differences and a third one in Salles 2021a, where I show that the teleological basis of F_1 is profoundly different from the teleology of the *Timaeus*.

In the case of F_2, a strong antecedent is the argument at *Philebus* 29a9–30a8, tightly related to an argument developed by Xenophon at *Memorabilia* 1.4.8.[12] I shall call this Xenophontic-Platonic proof "XP." Both F_2 and XP argue—unlike F_1—that the cosmos is intelligent because it is the origin of human intelligence. I begin by quoting in full the Phileban version of XP.

T6: Plato, *Philebus* 29a9–30a8

ΣΩ.Τὰ περὶ τὴν τῶν σωμάτων φύσιν ἁπάντων τῶν ζῴων, πῦρ καὶ ὕδωρ καὶ πνεῦμα καθορῶμέν που καὶ γῆν καθάπερ οἱ χειμαζόμενοι, φασίν, ἐνόντα ἐν τῇ συστάσει. ΠΡΩ. Καὶ μάλα· χειμαζόμεθα γὰρ ὄντως ὑπ' ἀπορίας ἐν τοῖς νῦν λόγοις. ΣΩ. Φέρε δή, περὶ ἑκάστου τῶν παρ' ἡμῖν λαβὲ τὸ τοιόνδε. ΠΡΩ. Ποῖον; ΣΩ. Ὅτι μικρόν τε τούτων ἕκαστον παρ' ἡμῖν ἔνεστι καὶ φαῦλον καὶ οὐδαμῇ οὐδαμῶς εἰλικρινὲς ὂν καὶ τὴν δύναμιν οὐκ ἀξίαν τῆς φύσεως ἔχον. ἐν ἑνὶ δὲ λαβὼν περὶ πάντων νόει ταὐτόν. οἷον πῦρ ἔστι μέν που παρ' ἡμῖν, ἔστι δ' ἐν τῷ παντί. ΠΡΩ. Τί μήν; ΣΩ. Οὐκοῦν σμικρὸν μέν τι τὸ παρ' ἡμῖν καὶ ἀσθενὲς καὶ φαῦλον, τὸ δ' ἐν τῷ παντὶ πλήθει τε θαυμαστὸν καὶ κάλλει καὶ πάσῃ δυνάμει τῇ περὶ τὸ πῦρ οὔσῃ. ΠΡΩ. Καὶ μάλ' ἀληθὲς ὃ λέγεις. ΣΩ. Τί δέ; τρέφεται καὶ γίγνεται ἐκ τούτου καὶ αὔξεται* τὸ τοῦ παντὸς πῦρ ὑπὸ τοῦ παρ' ἡμῖν πυρός, ἢ τοὐναντίον ὑπ' ἐκείνου τό τ' ἐμὸν καὶ τὸ σὸν καὶ τὸ τῶν ἄλλων ζῴων ἅπαντ' ἴσχει ταῦτα; ΠΡΩ. Τοῦτο μὲν οὐδ' ἀποκρίσεως ἄξιον ἐρωτᾷς. ΣΩ. Ὀρθῶς· ταὐτὰ γὰρ ἐρεῖς οἶμαι περί τε τῆς ἐν τοῖς ζῴοις γῆς τῆς ἐνθάδε καὶ τῆς ἐν τῷ παντί, καὶ τῶν ἄλλων δὴ πάντων ὅσων ἠρώτησα ὀλίγον ἔμπροσθεν. οὕτως ἀποκρινῇ; ΠΡΩ. Τίς γὰρ ἀποκρινόμενος ἄλλως ὑγιαίνων ἄν ποτε φανείη; ΣΩ. Σχεδὸν οὐδ' ὁστισοῦν· ἀλλὰ τὸ μετὰ τοῦτο ἑξῆς ἕπου. πάντα γὰρ ἡμεῖς ταῦτα τὰ νυνδὴ λεχθέντα ἆρ' οὐκ εἰς ἓν συγκείμενα ἰδόντες ἐπωνομάσαμεν σῶμα; ΠΡΩ. Τί μήν; ΣΩ. Ταὐτὸν δὴ λαβὲ καὶ περὶ τοῦδε ὃν κόσμον λέγομεν· [διὰ] ** τὸν αὐτὸν γὰρ τρόπον ἂν εἴη που σῶμα, σύνθετον ὂν ἐκ τῶν αὐτῶν. ΠΡΩ. Ὀρθότατα λέγεις. — ΣΩ. Πότερον οὖν ἐκ τούτου τοῦ σώματος ὅλως τὸ παρ' ἡμῖν σῶμα ἢ ἐκ τοῦ παρ' ἡμῖν τοῦτο τρέφεταί τε καὶ ὅσα νυνδὴ περὶ αὐτῶν εἴπομεν εἴληφέν τε καὶ ἔχει; — ΠΡΩ. Καὶ τοῦθ' ἕτερον, ὦ Σώκρατες, οὐκ ἄξιον ἐρωτήσεως. — ΣΩ. Τί δέ; τόδε ἆρα ἄξιον; ἢ πῶς ἐρεῖς; — ΠΡΩ. Λέγε τὸ ποῖον. — ΣΩ. Τὸ παρ' ἡμῖν σῶμα ἆρ' οὐ ψυχὴν φήσομεν ἔχειν; — ΠΡΩ. Δῆλον ὅτι φήσομεν. — ΣΩ. Πόθεν, ὦ φίλε Πρώταρχε, λαβόν, εἴπερ μὴ τό γε τοῦ παντὸς σῶμα ἔμψυχον ὂν ἐτύγχανε, ταὐτά γε ἔχον τούτῳ καὶ ἔτι πάντῃ καλλίονα; — ΠΡΩ. Δῆλον ὡς οὐδαμόθεν ἄλλοθεν, ὦ Σώκρατες.

12 The Xenophontic version may be earlier than the Phileban one and could be the model followed by Aristotle in his reception of the proof at *Part. an.* 1.1 641b10–23. For discussion see Sedley 2007, 81–82, 218 and Salles 2018, 39-43.

*αὔξεται Burnet cum Jackson : ἄρχεται BT ** διὰ secl. Burnet cum Badham

> SOC. We somehow observe that the things related to the nature of all animals—fire, water, breath and 'earth' as those shattered by a storm—are present in their constitution. PROT. Very much so, for we are really shattered by a difficulty in our present arguments. SOC. Come, then, and focus on the following aspect of each of our own constituents. PROT. Which one? SOC. That each of them is present in us in a tiny and worthless portion, that is not polluted anywhere and in any way and that does not possess the power worthy of its nature. Concentrate on one case and draw the same conclusion for all cases. For instance, fire is in us but also in the whole. PROT. Yes indeed. SOC. And is not the one in us something tiny, weak and worthless, but the one in the whole is amazing in amount and beauty and in all the power that characterizes fire? PROT. What you say is perfectly true. SOC. And what about this? Is the fire in the whole nourished by, generated from and increased by the fire in us or, on the contrary, it is from that one that my fire, yours and that of the other animals have these things? PROT. What you ask does not deserve an answer. SOC. And rightly so. I think you will say the same things regarding the earth here in the animals and that in the whole, and also regarding all the other things that I was asking a little earlier. Is this how you will answer? PROT. Who could seem reasonable by giving a different answer? SOC. Hardly anyone. But now follow what comes next, for do we not call 'body' all the things we just mentioned when we look at them as a unit? PROT. Yes we do. SOC. So notice that the same goes for that which we call 'cosmos': being a composite of these things, it would be, somehow in the same sense, a body. PROT. This is totally right. SOC. Now is the body in us nourished by that body as a whole and it is from it that it has taken and currently possesses all the things we just mentioned or is that body nourished by the body in us and from it that it has taken and currently possesses them? PROT. This too, Socrates, does not deserve a question. SOC. Well then, does the following one deserve one? What would you say? PROT. Tell me what it is. SOC. Will we not say that our body has a soul? PROT. It is clear that we will. SOC. Whence, my dear Protarchus, does it take it unless the body of the whole, by having the same properties as [our body] but finer in all respects, happens to be animate? SOC. It is clear, Socrates, that from nowhere else.

The argument structure of XP according to this Platonic version is as follows: (a*) human beings possess intelligence; (b*) our intelligence is a basic

substance; (c*) any basic substance that exists in human beings is part of a larger amount of that substance in the cosmos; therefore, (d*) the cosmos too possesses intelligence. Both (b*) and (c*) are clearly reflected in the text. In particular, (b*) is implied in the comparison made in the text between intelligence and the four elements (fire, air, water, and earth). Note the total absence of biological concepts, so perspicuous in F_2. The non-biological character of XP is, therefore, a crucial difference between XP and F_2. As is noted by David Sedley,

> Zeno [the main proponent of F_2] has thus opted for a very specific interpretation of the way in which cosmic intelligence serves as the source of human intelligence. He has phased out the analogy between cosmic intelligence and the cosmic pools of the four elements [characteristic of XP], and instead singled out cosmic intelligence as having a unique causal relation to the intelligences of individual humans. It is no longer the material reservoir from which our intelligences have been siphoned off, but is instead their quasi-biological parent or progenitor. The way in which the intelligence of the cosmos is manifested in us too is assimilated to genetic transmission through seed.[13]

One significant component of the non-biological, elemental model followed by XP is the explication it offers of how intelligence is transmitted to us from the cosmos. It does so by separation and locomotion. Based on the analogy between intelligence and the four elements, XP puts forward the idea that the intelligence currently present in us is a portion of cosmic intelligence that separated from it at some point in the past, and that travelled from the outside cosmos to us. In general terms the separation-locomotion model in XP is one where, when a body A causes a body B to have a certain power P, P is a body that separates from A and travels from A to B. The cause of this separation and locomotion is not mentioned in XP, either in its Xenophontic or its Phileban version. We do not know how or why for XP the portion of intelligence currently in us separated from the cosmic reservoir of intelligence and gradually moved away from it.[14] One hypothesis is that for Plato these changes were effected by a divine Demiurge who created the cosmos as a whole. He was the agent of the separation-locomotion of the intelligent substance that is now in us. The divine Demiurge, however, understood as something distinct

13 Sedley 2007, 224. I develop my views on this subject in detail in Salles 2018.

14 For discussion, see Sedley 2007, 222–24.

from the cosmos and its intelligent soul, as is the case in the *Timaeus*, is notoriously absent from the *Philebus*, which is where we find XP.[15] Another hypothesis is that these changes were effected by cosmic intelligence itself, not by a Demiurge distinct from it. Cosmic intelligence would have acted on itself by dividing itself and taking away a small portion of itself to create humankind. This hypothesis finds some support in the notion, presented slightly earlier in the dialogue, that cosmic intelligence is an all-powerful "master of heaven and earth" (28c7–8: νοῦς ἐστι βασιλεὺς οὐρανοῦ τε καὶ γῆς) and that it "conducts absolutely all things and the so-called whole" (28d5–6: τὰ σύμπαντα καὶ τόδε τὸ καλούμενον ὅλον ἐπιτροπεύειν). But however we interpret the cause of the separation of human intelligence from cosmic intelligence, and its subsequent locomotion away from it, this separation and locomotion are not explained in biological terms. For instance, it is not compared in any way to the process by which individual human beings proceed from their parents, a key idea in F_2.

8.3 The Evidence for F3 and Why F3 and F2 Are Two Distinct Families

To find a parallel in Stoicism with the non-biological model in XP, we need to look at F_3, the third family of proofs that I should like to discuss in this chapter. Examples of proofs belonging to this family are provided in Cicero, *De natura deorum* 2.18, Marcus Aurelius 4.4, and Sextus Empiricus, *Adversus Mathematicos* 9.98. I cannot look closely at each of these three sources in this chapter.[16] But they have two central features in common with XP that rest on physical elemental theory: (a) the conception of intelligence as a substance in the cosmos at large, on a par with the four elements, and (b) the idea that our intelligence is a portion of this intelligent substance. These features are most conspicuous in the proof in Marcus Aurelius.

T7: Marcus Aurelius 4.4

ὥσπερ γὰρ τὸ γεῶδές μοι ἀπό τινος γῆς ἀπομεμέρισται καὶ τὸ ὑγρὸν ἀφ' ἑτέρου στοιχείου καὶ τὸ πνευματικὸν ἀπὸ πηγῆς τινος καὶ τὸ θερμὸν καὶ πυρῶδες ἔκ

15 Some interpreters have argued that the Timaean Demiurge is in fact identical to the cosmos and that the cosmic soul is nothing other than the soul of the Demiurge himself (see e.g., Cornford [1937, 35, 197] and more recently Carone [2005, 42–48]). I find this interpretation unconvincing for the reasons pointed out in Broadie 2012, 7–26.

16 For the proof in Sextus, see Sedley 2007, 222–23. For the proof in Marcus, see Sedley (2012, 397–98), discussed in Gill (2013, 122–23).

τινος ἰδίας πηγῆς (οὐδὲν γὰρ ἐκ τοῦ μηδενὸς ἔρχεται, ὥσπερ μηδ' εἰς τὸ οὐκ ὂν ἀπέρχεται), οὕτω δὴ καὶ τὸ νοερὸν ἥκει ποθέν.

For just as what is earthy in me is a part that detached from some earth and what is humid is from another element and what is breathy from some source, and the heat and what is fiery from some peculiar source (for nothing comes from nothing just as nothing goes away into what is not), so too what is intelligent comes from somewhere.

Both (a) and (b) are also conspicuous in the other two sources for F_3. Consider Sextus Empiricus.

T8. Sextus Empiricus, *Adversus Mathematicos* 9.98

Ἔνεστι δὲ καὶ οὕτως τὸν αὐτὸν συνερωτᾶν λόγον· εἰ μὴ ἦν τι γεῶδες ἐν κόσμῳ, οὐδὲ ἐν σοί τι ἂν ἦν γεῶδες, καὶ εἰ μὴ ἦν τι ὑγρὸν ἐν κόσμῳ, οὐδ' ἂν ἐν σοὶ ἦν τι ὑγρόν, καὶ ὁμοίως ἐπὶ ἀέρος καὶ πυρός. τοίνυν καὶ εἰ μὴ ἦν τις ἐν κόσμῳ νοῦς, οὐδ' ἂν ἐν σοί τις ἦν νοῦς· ἔστι δέ γε ἐν σοί τις νοῦς· ἔστιν ἄρα καὶ ἐν κόσμῳ. καὶ διὰ τοῦτο νοερός ἐστιν ὁ κόσμος. νοερὸς δὲ ὢν καὶ θεὸς καθέστηκεν.

It is also possible to pose the same argument like this: If there were not something earthy in the world, there would not be something earthy in you either. And if there were not something moist in the world, there would not be something moist in you either. And likewise for air and fire. Therefore also if there were not intelligence in the world there would not be intelligence in you either. But there is intelligence in you. Therefore there is intelligence in the world. And for this reason the world is intelligent, and, being intelligent, is god.[17]

The presence of both (a) and (b) in the three proofs is, therefore, a sufficient reason both for grouping them together into a single family and for distinguishing this family from F_2 and for establishing a tight relation between F_3 and the separation-locomotion model advanced by Plato in XP.

In the remainder of this section, I should like briefly to compare how intelligence is transmitted to us from its origin according to F_2, if not by the separation-locomotion model in F_3. We must begin by looking carefully at the

17 Translation from Sedley 2007, 223 n. 37.

evidence for F_2. Its single most important member is attributed to Zeno by Sextus Empiricus in a passage that I have not cited so far.[18]

T9: Sextus Empiricus, *Adversus Mathematicos* 9.101–103 (> SVF 1.113a, < BS 12.16)

Ζήνων δὲ ὁ Κιτιεὺς ἀπὸ Ξενοφῶντος τὴν ἀφορμὴν λαβὼν οὑτωσὶ συνερωτᾷ· τὸ προϊέμενον σπέρμα λογικοῦ καὶ αὐτὸ λογικόν ἐστιν· ὁ δὲ κόσμος προΐεται σπέρμα λογικοῦ· λογικὸν ἄρα ἐστὶν ὁ κόσμος. […] καὶ ἔστιν ἡ τῆς συνερωτήσεως πιθανότης προὖπτος. πάσης γὰρ φύσεως καὶ ψυχῆς ἡ καταρχὴ τῆς κινήσεως γίνεσθαι δοκεῖ ἀπὸ ἡγεμονικοῦ, καὶ πᾶσαι αἱ ἐπὶ τὰ μέρη τοῦ ὅλου ἐξαποστελλόμεναι δυνάμεις ὡς ἀπό τινος πηγῆς τοῦ ἡγεμονικοῦ ἐξαποστέλλονται, ὥστε πᾶσαν δύναμιν τὴν περὶ τὸ μέρος οὖσαν καὶ περὶ τὸ ὅλον εἶναι διὰ τὸ ἀπὸ τοῦ ἐν αὐτῷ ἡγεμονικοῦ διαδίδοσθαι. ὅθεν οἷόν ἐστι τὸ μέρος τῇ δυνάμει, τοιοῦτον πολὺ πρότερόν ἐστι τὸ ὅλον. καὶ διὰ τοῦτο, εἰ προΐεται λογικοῦ ζῴου σπέρμα ὁ κόσμος, οὐχ ὡς ὁ ἄνθρωπος κατὰ ἀποβρασμόν, ἀλλὰ καθὸ περιέχει σπέρματα λογικῶν ζῴων, περιέχει τὸ πᾶν, οὐχ ὡς ἂν εἴποιμεν τὴν ἄμπελον γιγάρτων εἶναι περιεκτικήν, τουτέστι κατὰ περιγραφήν, ἀλλ᾽ ὅτι λόγοι σπερματικοὶ λογικῶν ζῴων ἐν αὐτῷ περιέχονται. ὥστε εἶναι τοιοῦτο τὸ λεγόμενον· ὁ δέ γε κόσμος περιέχει σπερματικοὺς λόγους λογικῶν ζῴων· λογικὸς ἄρα ἐστὶν ὁ κόσμος.

(1) Zeno of Citium, taking his starting point from Xenophon argues as follows: ‘What sends forth a seed of something rational is itself rational; but the cosmos sends forward a seed of something rational; therefore, the cosmos is rational.’ […] (2) And the persuasiveness of the argument is manifest. (3) For the beginning of motion in every nature and soul seems to proceed from the ruling part, and all the powers that are dispatched to the parts of the whole are dispatched from the ruling part, as from some kind of spring, and hence every power that exists in the part also exists in the whole because of being passed on to [the part] from the ruling part that lies in it [i.e., in the whole]. From this it follows that the part is just like [the whole] in its power except that the whole is so primarily and to a much greater extent. (4) And for this reason, if the cosmos sends forth the seed of the rational animal (not as a man [namely] by ejaculation, but insofar as it contains the seed of rational animals), then it contains

18 See also Cicero, *Nat. D.* 2.22 and Diogenes Laertius 7.142–143 cited and discussed in Salles 2018, 50–53.

> everything, not as we would say that the vine embraces the grapes, i.e. along their surface, but because the seminal principles of rational animals are contained in it. (5) In consequence, what is said [by Zeno] is like this: 'the cosmos contains the seminal principles of rational animals; therefore, the cosmos is rational.'

The passage divides into two main parts. The first one—corresponding to (1)—reports the Zenonian proof; the other one—divided into four sub-parts, (2)–(5)—is a commentary on the proof, beginning with overt approval for the proof ("the persuasiveness of the argument is manifest"). Sextus does not mention who his source is. But the commentary is surely a constructive *Stoic* exegesis of Zeno's proof in terms of the theory of seminal principles, explicitly referred to in the passage.[19] In any case, the commentary is a precious source of information for what were probably Zeno's original insights behind the proof. In order to be able to understand how intelligence is transmitted from the cosmos to human beings, we need first to study this commentary.

Its four parts are the statement in (2) of the persuasiveness of Zeno's proof, an account in (3) of why, in any natural being, the powers of the parts of a whole are also powers of the whole itself, the explication in (4) of how the seed of human beings is part of the cosmos (it is part of the cosmos neither in the way in which human semen is part of a man nor the way in which grapes are parts of a vine), and finally a restatement in (5) of Zeno's proof. The core of the commentary is obviously the account in (3). The reason explicitly given by the anonymous Stoic for why the powers of the parts of a whole are also powers of the whole is that the powers of the parts of a whole are "passed on" to the parts from the ruling part of the whole (ἀπὸ τοῦ ἐν αὐτῷ ἡγεμονικοῦ διαδίδοσθαι). This is a causal claim that rests on a general principle I shall call "Power Causation." This principle is that, in any whole W that has a "ruling part" (*hēgemonikon*), this part is the cause of why its other parts have the powers that they actually have. The fundamental notion of the "ruling part" of a whole derives from the idea advocated by the Stoics that, in any heterogeneous whole, one of its parts brings together the other parts and is, therefore, its "cohesive" or "sustaining" cause (*synektikon aition*), i.e., what is responsible for the endurance of the whole. For example, the roots of a plant are for the Stoics the ruling part of the plant in this sense and, in animals, including human beings, it is the part of the soul that coordinates the goal-directed use of the animals' different

19 See Sedley 2007, 225.

powers.[20] Two other central principles in (3) are: *Causal Synonymy* (if A causes B to have a power, then A must have that power too), and *Whole Identity* (in any ensouled whole W, the identity of W is fixed by its ruling part). Given these three principles, Zeno's argument, as construed by the anonymous Stoics, works in the following manner: since the seed of humankind is intelligent and part of the cosmos, then given *Power Causation*, the ruling part of the cosmos must be the cause of its intelligence; so, given *Causal Synonymy*, the ruling part of the cosmos must be intelligent; and so, given *Whole Identity*, the cosmos as a whole must be intelligent.

Returning to our initial question: according to F_2, how is intelligence transmitted from the cosmos to us and, more specifically, to our seed? The answer that we give to this question will depend on how, in general terms, the powers of the cosmos, and especially those of its ruling part, are transmitted to its parts. One possibility that ought to be considered is that it is not by the separation of a substance from the ruling part and its subsequent locomotion to the other parts of the cosmos, as in F_3, but by the transmission of a *state*, namely, a certain degree of physical tension (*tonos*). The seed of humankind becomes intelligent when the ruling part of the cosmos transmits to the seed a certain degree of tension. States, however, either in Stoicism or on general ontological grounds, are not themselves substances, i.e., discrete bodies over and above the bodies of which they are a state. For example, when a musician plays the cello, the tension that her hand transmits to the strings through the bow is not a substance over and above the bow, the hand, and the strings. Nor a fortiori is it a substance that separates from the hand and travels from the hand to the strings through the bow, and from there to the audience attending the performance.[21] A full understanding of this model requires a detailed discussion of how exactly state transmission works in Stoic cosmology, if not by separation

20 The notion of cohesive cause is presented in a number of sources dealing with Stoic causal theory, for which see for instance *SVF* 2.346, 2.351, 2.356, and 2.368. The identification of the ruling part of a whole with its cohesive cause, in the complex sense that it is responsible for the coordination of the powers of its different parts, is explored and discussed with great care in Powers 2012, 247–62.

21 In an obvious, straightforward way states do locomote: in my example, the tension must move from the hand of the cellist to the bow, from there to the strings, and from there to my ears (if I am to hear the sound). But the locomotion of a state does not entail the locomotion of a body, insofar as states are not bodies in themselves. I discuss these issues in Salles 2018, 58–61. The idea that the state of a body is not itself a body, over and above the body of which it is a state, is a tenet of Stoic ontology. A standard example is a fist. A fist is not a body over and above the hand that makes the fist, but merely the hand "somehow

and locomotion.[22] At any rate, this constitutes an essential difference between F_2 and F_3 regarding the question of how intelligence is transmitted from its origin to us.

8.4 Conclusion

In this chapter, I presented a division of the Stoic proofs of the intelligence of the cosmos into three distinct families and studied the possible Platonic antecedents of each. The three families are F_1, which is mainly teleological, F_2, which is mainly biological, and F_3, which is neither teleological nor biological: it rests rather on physical, elemental theory and the intuition that intelligence is a substance that exists in the cosmos on a par with fire, air, water, and earth, and that our intelligence is a detached portion of that substance. F_1 and F_3 have strong Platonic antecedents: *Timaeus* 30a2–c1 (**T5**) and *Philebus* 29a9–30a8 (**T6**) respectively. Both F_3 and F_2 maintain that the cosmos is intelligent because it is the *origin* of human intelligence, which is why both are related to Phileban-Xenophontic proof that I called 'XP'. In this respect, they both differ greatly from F_1. But despite this strong similitude between F_2 and F_3, they are nonetheless distinct families because they differ significantly from one another on the question of how intelligence is transmitted to us from its cosmic origin. The account provided by F_2 is biological and has no antecedent in Plato. From this very particular angle, F_2 is doubtless the most original of the three families.[23]

disposed" (*pōs echon*). See for example Alexander of Aphrodisias, *In Top*. 360, 12–13 (*SVF* 2.379), discussed in Salles 2018, 60.

22 For state transmission in Stoic physics, I find the analysis in Sambursky (1959, 22–24) especially illuminating in terms of wave propagation (although in other respects Sambursky's analysis is a little dated in the modern ideas that it attempts to read back into the Stoics). See Salles 2018, 58–61.

23 I had the great opportunity to discuss some of the issues presented here at the conference "Time and Cosmogony in Plato and the Platonic Tradition" organized by Daniel Vázquez and Silvia De Bianchi at the Autonomous University of Barcelona, October 22–23, 2019. I am grateful to the editors of the present volume for their comments, help, and encouragement. The research for the final version of this chapter was conducted with the support of the project UNAM-PAPIIT IN403620.

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